

CHRISTER FRITZELL

TEACHING,
SCIENCE AND IDEOLOGY

CWK GLEERUP

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CHRISTER FRITZELL

TEACHING, SCIENCE AND IDEOLOGY

A Critical Inquiry into the Sociology of Pedagogy

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Preface

Although this study was written during the last few years, in a sense it took its beginning in the early 70's - at the time of the aftermath of the intense questioning of educational practices in the late 60's - when I first made direct contact with academic research and started to work with a project concerned with teacher roles and education. In trying to resolve my specific tasks in that context, I could not help but engage in reflections upon their wider significance and in general attempt to understand some pertinent aspects of what pedagogy, as a scientific endeavour, was all about. Directing my interests to the broad and educationally crucial field of research on teaching at large, I was increasingly intrigued by the apparent contrast between the self-assured methodological rigour of a long tradition of empirical research and the theoretical basis of any claims to practical applicability with regard to its general achievements.

It gradually appeared to me that many features of research in this field fell back on a paradigmatic framework in which a narrow empiricist orientation combined with a certain idealized view of practicality, making for the pursuit of empirical pieces of theoretically scattered knowledge, the practical viability of which often seemed somewhat far-fetched in terms of prevailing forms of educational control. Specifically, predominant research seemed to manifest a distinctive disregard of the social character of its basic phenomena and a certain failure to apprehend its problems on the basis of a critical comprehension of their relationships to society at large. Indeed, it seemed to me that academic pedagogy in general suffered from a remarkable weakness in critical traditions of social scientific inquiry. Primarily directing my theoretical concerns to sociological aspects of research on teaching, this view considerably influenced the efforts to be presented in this study.

I see these efforts as basically an attempt to come to grips with a few fundamental issues within a vast and complex area of pedagogical problems in

such a way that subsequent elaboration on a number of emerging aspects may become feasible. Thus, the study places its emphasis upon a tentative discussion of the general features of a theoretical perspective at the expense of a more confident analysis of the specific details of "concrete" issues, venturing to probe some unsettled but essential questions rather than providing impeccable but trifling answers. While such an approach may no doubt also entail the invitation of all kinds of ambiguities and imperfections, as well as criticisms based in all kinds of concerns, it is my hope that the study may contribute in some respects to that critical reconsideration of basic notions to which the ideals of scientific endeavour adhere.

I would like to take this opportunity to acknowledge some contributions to my work. I am indebted to the leader of the project alluded to above, Fil Lic Bertil Gran, for generously allowing the pursuit of my own early interests within its confine. I am grateful for a graduate scholarship from the University of Lund, which later provided the means for concentrating on this task for a period of time, and for the practical assistance provided by the Department of Educational Research at the Malmö School of Education. I express particular gratitude to Professor Åke Bjerstedt, who besides helping with practical problems also suggested improvements on various working manuscripts. Among other colleagues at the Malmö Department who have given constructive comments on an earlier draft, I would like to mention Professor Ebbe Lindell, Docent Elisabeth Jernryd and especially Fil Lic Henry Egidius.

I appreciate the critique and encouragement given by Professors Joachim Israel and Staf Callewaert and Fil Kand Ulf Torper, and I thank them for their time and interest.

My thanks are also due to Mrs Britt Persson, who skilfully typed the manuscript, and Mr David Weston, who corrected many mistakes in my English.

Frequent discussions with my friend Göran Jansson have contributed to the clarification of some of the more basic problems involved in this work, and I thank him for his supportive optimism and open-minded search for stimulating reciprocities within the nucleus of psychology.

Last, but most of all, I thank Elisabet for sharing some of the personal discomforts of my efforts, and our sons Simon and Jonah for their great insight into the technological paradox of how disturbances in the pursuit of a certain end may actually help to bring it about.

Lund in February, 1981

C.F.

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Introduction

The general purpose of this study is to inquire into the relationships between pedagogy and society, thus to contribute in some respects to the understanding of pedagogy as a social phenomenon. Defining pedagogy as the processes and products of the scientific study of education, the study will direct particular attention to the field of theory and research on teaching pertaining to the elementary levels of education in the USA and Sweden. More specifically, the study will inquire into the relationships between what might be called a certain "paradigmatic" tradition in this pedagogical field and certain social conditions under which it has developed. Thus, basically concerned with sociological aspects of a pedagogical paradigm, the study may be seen as pursued from three interrelated points of departure, which define the contexts of its major aims.

(1) The first point of departure is internal to the paradigm at issue, in the sense that it is approached from the standpoint of pertinent research within the paradigm itself. The corresponding aim is to provide a description of some of its distinguishing features, primarily in terms of sociological aspects within research on teaching. Thus, the study will emphasize such features of the general theory and methodology of science within the paradigm, which may illuminate how sociological premises, methods, models, etc may be considered as explicit or implicit elements of the paradigm. In this sense, an attempt will be made to describe some aspects of what could be called a paradigmatic "pedagogical sociology".

(2) The second point of departure is external to the paradigm, in the sense that its pedagogical sociology is approached as a sociological problem in itself. In this context, the aim is to provide an explanation of the distinguishing features observed within the internal context of the theory and methodology of science of the paradigm. Here, the pedagogical paradigm will be considered from the standpoint of a sociology of science, placing

its emphasis on the analysis of research on teaching as a social phenomenon within a wider societal framework. From this extended perspective, the study will thus engage in what could be called a "sociology of pedagogy".

(3) On the basis of this dual interest in the relationships between pedagogy and society, i.e. the sociological concerns from "the point of view of pedagogy" and from "the point of view of society" respectively, the study will attempt to pursue a third aim. This aim pertains to the inter-mediate point of departure of the interdependency of the internal and external contexts of inquiry, and concerns theoretical critique of the pedagogical paradigm through the observation of certain sociological premises of distinction. At this point, the study will try to stimulate a redirected and extended discussion on fruitful modes of conducting theory and research on teaching by considering the possibility of a "paradigmatic transition" within pedagogy from one kind of sociological reasoning to another. This transition concerns the feasibility of change from the sociology involved in the internal description at point (1) to the sociology involved in the external explanation at point (2). However, for reasons to be discussed below, this pursuit of what could be called a "critical pedagogy" is subordinate to the pursuit of the aims of description and explanation, in the sense that the presentation focuses explicitly upon the critical purpose only by way of conclusion in the last chapter.

The aims thus stated are restricted to a particular scope within the present study. There can, of course, be no pretention to comprehensiveness with regard to the general concerns of a sociology of pedagogy since a number of pertinent issues are excluded from the range of this study. In particular, the following limitations on the intended scope should be emphasized.

(a) Within the internal context of inquiry, the study is confined to a prime concern with a particular tradition of pedagogy, which may be referred to as a certain "scientific paradigm" in the general sense that this term has been used by Kuhn (1970). Without entering into a discussion of the further significance of the Kuhnian paradigm theory in this specific context, the study will make use of the concept of paradigm to indicate the basic interest in a tradition of pedagogical achievements "that some particular scientific community acknowledges for a time as supplying the foundation for its further practice" (Kuhn, op cit, p 10). The tradition at issue may be referred to as the "normal" (Kuhn, op cit), "mainstream" (Bellack, 1978), or "predominant" (the term to be used in this study) paradigm of research on

teaching. Thus, while this paradigm may co-exist with others, having various degrees of importance to the discipline of pedagogy at large, the scope of this study is limited to a preoccupation with what may be considered as the predominant paradigm. The motives for this limitation are primarily that this paradigm is likely to be of major sociological interest, and that the exclusion of more or less significant alternatives may provide for analytical and discursive simplicity and clarity. It should be understood, hence, that this study does not consider the full range of scientific theory and research on teaching, and even less educational phenomena at large.

(b) As little as this study sets out to discuss various alternatives to the predominant paradigm within the internal context, it equally does not linger on the investigation of conceivable alternatives in terms of sociological theories within the external context. Instead, the study concentrates on the development of one explanatory framework, and the ambition at the various analytical cross-roads is thus to pursue a coherent and fruitful line of arguments with regard to this particular framework. A primary basis in this respect will be taken in Marxian social theory, and no effort will be made to present or develop other approaches, whether inside or outside of this basis, than those considered as directly relevant to the efficient advancement of the general line of analysis as to the specific problem at hand. Hence, the scope of inquiry is confined to a preoccupation with the exploration of the explanatory potentials of Marxian theory in the context of theory and research on teaching. As to the choice of a Marxian basis of analysis, it may need some emphasis in this pedagogical context that it is primarily motivated, not by an assumed capacity to prescribe the details of what educational reality ought to be like, but by a perceived promise to provide for a fruitful comprehension of certain aspects of what this reality actually seems to be like. Thus, to use a common distinction within the predominant paradigm, the aims to describe and explain certain pedagogical facts are prior to the explicit normative concerns in this study.

(c) The use of this distinction between what "descriptively is" and what "normatively ought to be", however, is not intended to invoke an assumption of a rigid separation between "facts" and "values". But it may be helpful in order to point out a limitation in the scope of the study, which may be emphasized in terms of the presentation of the critical purpose of contributing to pedagogical change. The theoretical problem of such change is explicitly considered only in the last chapter, and the critical purpose is in this sense subordinate to the other aims. Apprehending this subordination as a matter of the focus of the presentation, rather than as a matter of

theoretical analysis and synthesis, the study thus concentrates on the provision for a theoretical understanding of the paradigmatic facts as a basis of the discussion of the feasibility of change. This feature of the study's scope will be further clarified below.

(d) The intended scope is restricted by the sociological point of departure in general, which will of course play down aspects of the paradigm that would be more concentrated upon from the standpoint of other disciplines, like psychology or the philosophy of science. Aspects of central concern to those disciplines mentioned will be considered in the study, but then primarily to complement or elucidate the basic sociological concerns. Within the internal context, for instance, considerations on psychological theory and research will play important parts in the effort to provide an adequate description of the actual features of the paradigm, but the basic intent is nevertheless to make for the observation of sociological implications. In this sense, the scope of this study is characterized by a sociological reduction, but this restriction does not imply that contributions by other disciplines to the understanding of the topical issues are considered as unimportant. It simply means, that this particular study approaches the aims of explanation and theoretical critique in sociological terms, while other points of departure are left aside.

(e) The scope is further delimited by a prime concern with pedagogical theory and research in the context of a particular kind of society, exemplified by the cases of the USA and Sweden. The reasons for the focus on these countries are primarily practical; the overwhelming majority of studies in the field have been conducted in the former, and this study is carried out in the latter. However, the sociological analysis is pursued at a level within which other countries may be included by implication, and deliberations as to applicability may take place from case to case. Most importantly, though, such deliberations will have to acknowledge that there is no intent in this study to elaborate on pedagogical theory and research within any other societal framework than the one explicitly stated. Thus, any effort to include other states of society, whether hypothetical or actually existing, in the scope of the conclusions reached in this study will be premature insofar as its basic criteria of applicability - the explanatory potentials of the sociological theory in use and the predominance of the paradigm - are not taken into account.

Within the prime scope of inquiry thus stated, the aims will be pursued by means of a rather complex method, some significant features of which will

be presented in the following. The first major aim, i.e. to provide a description of some aspects of the paradigm, may at first glance seem fairly trivial in terms of methods for its pursuit. Thus, for instance, a proper method in this respect may seem to involve simply the straight-forward enumeration of what accepted handbooks in the field consider as model rules and standards for scientific practice. However, while such a method of description may be feasible in certain cases, e.g. within the concerns with some aspects of the normal paradigm of classical natural science, it may turn out to entail considerable complications in a field such as that of research on teaching. Here, a complex variety of intentions, approaches, implied stipulations, philosophical premises, and so on may prevail in confusing co-existence and make a description of the "normal" paradigm into quite a troublesome endeavour. The task may be further complicated by the possibility that there can exist important discrepancies between what Kaplan (1964, p 8) calls "logic-in-use" and "reconstructed logic", in the sense that actual research may differ in some respects from the way in which it is described in specific texts. Hence, the aim of description cannot be pursued by merely summing up the content of even well-chosen books in the area.

In this study, it is a basic standpoint that there are no "objective" criteria for what constitute the paradigmatic facts, and that consequently no "neutral" description of the paradigm is feasible. Instead, the study asserts, the establishment of such facts will have to be carried out by means of what will be called a process of "theoretical reconstruction". In order not to describe the paradigm on the basis of mere opinion or fortuitous coincidence, a specific theoretical framework is needed to provide a necessary source of direction.

Such a theoretical framework of descriptive reconstruction may, as implied by the presentation of this aim above, be found within the context of the predominant paradigm itself. Although no "neutral" facts may be taken for granted, and although the range of consensus is likely to shrink as the precision of the description increases, extensive inter-subjective agreement should be possible on a number of general features. Thus, the ambition at this point is to connect as much as possible with intra-paradigmatic modes of understanding the scientific task and to try to avoid violations of predominant views on the actual character of research on teaching. In effect, this intention involves the attempt to define the paradigm through the reconstruction of such conceptions of science, which may in fact be seen as making this paradigm into the "predominant" one.

Two aspects may be differentiated in this process of descriptive recon-

struction. The first concerns the establishment of a basis of description, in the sense of what to describe, while the second pertains to the use of a certain mode of description, in the sense of how to describe. As to the first aspect, the desire to approach a wide intra-paradigmatic consensus delimits the basis of description to a prime concern with general features of the paradigm, thus possibly disregarding specific features of certain areas. Furthermore, the study will attempt to describe such features that may be considered as fundamental to the paradigm. As indicated by the very use of the concept of paradigm, the ambition is to direct attention to such elements of theory and research that are acknowledged as supplying the foundation for the further pursuit of the paradigmatic task (cf point (a)). This means that a focus will be placed upon such general and persistent features of a tradition of scientific production that can be regarded as fundamental to its very maintenance in terms of paradigmatic distinction. Thus, emphasizing recurrent features of the scientific production within the paradigm, diachronically as well as synchronically, the descriptive reconstruction will basically concern paradigmatic reproduction in the sense that the general and persistent character of these features may be taken as indicative of their very significance as internal conditions for further paradigmatic production.

The mode of descriptive reconstruction is as follows. In discussing the various features of the paradigm, the study will refer to a number of sources concerning the writings of educationalists at different times. As to the issue of selectivity in this respect, the intent is to refer to distinguished and prolific writers in the context of well-known and influential handbooks, textbooks, etc. These data in the form of statements on pertinent issues of theory and research on teaching are then considered in view of the intent to provide an adequate account for various aspects of paradigmatic reproduction.

Two different techniques will be used in this context; generalization and typification. In some cases, the issue at hand is discussed in terms of the feasibility of reaching a conclusion in the form of a generalization of the various standpoints observed, whereas in other cases a typical approach to some issue is suggested as a means of pinpointing a certain feature. In still other cases, a combination of both techniques may be needed. To exemplify, the aims of research on teaching are stated in chapter 5 by means of a generalization of the viewpoints observed, while in chapter 6 a certain role theory is seen to typify some basic aspects of the theoretical character of such research. Elsewhere, as in chapter 9 on the problem of reification, certain generalizations are ventured and then illustrated by specific

manifestations, which may be taken to represent typical cases.

Since there are no clear-cut criteria to lean upon in this process, the reconstruction may be seen as susceptible to invalidation at several basic points. The focus on paradigmatic reproduction may be seen to disregard important aspects of development, the generalizations may be considered inadequate due to biased selectivity or too narrow a scope in certain respects, the typifications may be taken to represent only specific cases, and so on. These possible criticisms are difficult to avoid. It should be kept in mind, however, that the definition of the paradigm evolves as the study proceeds, and that separate elements may thus illuminate each other. Furthermore, in want for any predetermined criteria of validity and reliability, the fruitfulness of the reconstruction is primarily a matter of consideration in the subsequent discussions, which a study of this sort presupposes. In these discussions, it has to be taken into account that although a point of departure is taken in the internal context of the paradigm, the description is pursued here as an integral aspect of the study as a whole. Hence, the ambition to describe the paradigm with a high degree of intra-paradigmatic acceptability will have to be considered also in terms of the other aims of the study.

The second major aim, i.e. to provide an explanation of some distinguishing features of the paradigm, can perhaps appear to be as delicate, with regard to proper methods for its pursuit, as the aim of description may initially seem trivial. The problems of scientific explanation have created great debates within and between different schools of thought, and the concept of explanation is indeed both complex and value-laden. In this study, however, the term is used simply to indicate the ambition to provide for a theoretical framework in which the paradigm may be fruitfully understood as an element in an organized whole.

In pursuit of the aim of explanation, the study will approach the internal reconstruction from the external point of departure of a specific theory of the relationships between the paradigm and society at large. However, there is also reconstructive work to be done in this context and as with the internal context, two aspects may be differentiated here. The first concerns the basis of explanation, in the sense of what theoretical framework to use in the pursuit of explanation, while the second concerns the mode of explanation, in the sense of how to explain. Both these aspects contain crucial problems of reconstruction in the present context.

As has already been said, this study takes an explanatory basis in Marxian social theory. This delineation, however, is no doubt both wide and vague, since there may exist a number of feasible approaches within this

general framework. Thus, a specific basis of explanation will have to be reconstructed within the confines of this study. This endeavour will involve two steps. One may be seen as an "intension" of Marxian theory at large, in the sense that certain general features of such theorizing are brought forward and specified within the substantive concerns of this particular study. The other may be seen as an "extension" of Marxian theory, in the sense that elements developed within other areas of scientific inquiry are brought into and applied to the present context of pedagogy. In this way, it is hoped that a theoretical basis with a direct bearing upon the topical concerns can be established.

The mode of explanation to be used in this study centers on the effort to account for the paradigmatic features within the framework of the thus reconstructed basis of Marxian theory. Having described the paradigm in terms of certain internal conditions of scientific production within the paradigm, the study will attempt to explain these conditions from the external point of departure of a theory of society. This will be done by considering paradigmatic reproduction in the context of social reproduction in society at large in and by the sociological reduction maintained in this study.

While by and large making use of what Kaplan (1964, p 332) calls the "pattern model" of explanation, the study apprehends the paradigm as a constitutive element of society through its integration in the Marxian basis of explanation. In this process, the reciprocity between the internal and external contexts of inquiry will have to be acknowledged. The internal reconstruction of the paradigm as a "scientific" phenomenon and its external reconstruction as a "social" phenomenon should not only have adequate degrees of validity in themselves, but they have to be made intelligible in their interrelationships. Hence, the description of the paradigm will have to accommodate in certain respects to the explanatory potentials of the theory of society, which in its turn will have to pay due attention to the specificity of the phenomena at issue. This may seem self-evident, but it provides an opportunity to state what may need some emphasis here: There can be no pretention to consider the "whole truth" of either the paradigm or society, but the theoretical totality of this study concerns particular features of both, while other features are left aside. But as much as the study will try to focus on fundamental aspects of internal reproduction, it will also attempt to direct attention to fundamental conditions of production in society at large.

Thus, gradually penetrating into the relationships between paradigm and society, the study intends to provide certain reasons for the internal conditions of scientific production on the basis of the conditions of produc-

tion in society in general, and these reasons are taken to constitute the explanation. This explanation will emerge as the study proceeds in order to eventually approach that fragmented whole in which some aspects of the paradigm may be fruitfully understood as a social phenomenon, however incomplete and in need of further elaboration this account may yet be. In this sense, the problem of explanation is apprehended in this study in much the same way as manifested in the following quotation.

"Not all explanation consists in fitting something into a pattern already known. The task of explanation is often to find or create a suitable pattern. To find or create it we need not always obtain new data. The scientific achievement - especially in the formation of theories - often consists in discovering new significance in the old data, giving them significance by ordering them differently, making manifest a new pattern. It is in this way that descriptions often play an explanatory role: they allow us to see relations which had previously escaped notice... The explanation does its work by providing us with what has aptly been called a cognitive map, which tells us how things around us are laid out. Every explanatory pattern is a fragmented map of a limited territory; we aim to fill in details, and to fit it together with other fragments. As we pursue these aims, moving always into new territories, we subject the map to continuous test. A sound explanation is one that grows on us as our knowledge grows" (Kaplan, 1964, p 336).

With regard to the third aim, i.e. to subject the predominant paradigm to theoretical critique, it was stated above that this aim is subordinate to the other aims, in the sense that it is dealt with explicitly only in the last chapter. Thus, the subordination refers to the scope of the presentation of the various aims, and while the descriptive and explanatory aims are presented in some detail, the critical purpose will manifest itself only as a matter of closing the study. This mode of presentation is based on the assumption that a critical discussion of the feasibility of change presupposes a theoretical understanding of the actual features of the paradigm which such a critique opposes.

On the other hand, however, such knowledge of the "facts" is not considered as "neutral" to any and all theoretical positions. On the contrary, the study maintains that the description and explanation of the actual features of the paradigm is a matter of theoretical reconstruction, which cannot be carried out on the basis of a strict separation between "facts" and "values". Consequently, such reconstructions may relate in different ways to their "normative relevancy" in terms of paradigmatic reproduction and change. In this sense, the critical purpose implies that a fruitful understanding of the actual features of the predominant paradigm presupposes their critical apprehension. Since "critical", in this context, does not refer to some abstract condemnation of the present, but basically concerns the theoretical comprehension of the relationships between reproduction and

change, there is thus a certain reciprocity between the "descriptive" and "normative" aspects of the reconstructions involved in the study. This reciprocity takes on a crucial significance in view of the present concern with a critical reconstruction of the paradigm.

The concentration of the presentation on issues pertaining to paradigmatic reproduction may occasionally prompt the reader to think that crucial aspects of dynamic development and change are being neglected, merely glossed over, or even consciously avoided in favour of a biased advocacy of specific standpoints concerning such reproduction. This is of course very unfortunate, and the considerations in the following may help to reduce some of these ambiguities. Thus, in view of the further discussion of these matters in the last chapter, the reader is urged to consider some pertinent aspects of critical inquiry in the preceding sections of the study in which such aspects are supposed to be demonstrated.

Maintaining the previous distinction between basis and mode of reconstruction, the study may be seen to pursue its critical purpose in the following manner. The basis of reconstruction is here a certain "critical theory" of the relationships between fact and potentiality, in the sense that the prevailing features of the paradigm and its critical alternative are apprehended within the context of a dialectical totality. There are intrinsic relations between the actual character and conditions of the predominant paradigm, on the one hand, and the possibilities of paradigmatic change, on the other hand. Furthermore, there is an opposition between these theoretical elements within the totality, in the sense that the one is the negation of the other in specific respects. Hence, the internal and external contexts of inquiry represent distinct points of departure, but as such they are intrinsically related within the dialectical framework of their interdependencies.¹⁾

The mode of critical reconstruction is thus based on dialectical reasoning as to the relationships between the reproduction of paradigmatic conditions of scientific production, as internally described and externally explained previously, and their change, as a matter of the mediation between these contexts. On the basis of such dialectics, the explicit preoccupation with paradigmatic reproduction throughout the study up to the last chapter intends to involve the simultaneous, but so far implicit, pursuit of a critical understanding of paradigmatic change.

This may sound complicated and ambiguous, but the basic tenet of this mode of reconstruction is simple. The understanding of the conditions of

1) For an illuminating presentation of the basic categories of dialectics, see Israel (1979).

reproduction implies an understanding of the conditions, under which reproduction would not take place. In this sense, to comprehend reproduction is also to comprehend its negation in terms of change, insofar as the explanation of reproduction is actually carried out within a dialectical framework. Whereas the explanation of the existence of the paradigm is pursued in terms of reproduction, the critique of this reproductive existence is pursued in terms of change. The logic involved in this effort to comprehend change as a matter of "non-reproduction" will be further discussed in the last chapter, but it should be observed here that this mode of critical reconstruction relates intrinsically to the criteria of fruitfulness within the explanatory reconstruction.

Like any other explanation, the one pursued in this study involves a certain reduction of the complex pattern of interdependencies of the phenomena at issue. As already mentioned, a sociological reduction is maintained in this study, in that the explanation is carried out in terms of the possibility of considering scientific reproduction as a matter of social reproduction in society at large. This reduction is of particular significance within the critical reconstruction, in that the relationships between the internal and external contexts of inquiry may be thought of in terms of an opposition between reduction and autonomy.

The reduction of scientific reproduction to social reproduction negates the autonomy of the paradigm, in the sense that the internal conditions of scientific production are explained in terms of external conditions of production in society in general. Thus, the step from the internal description to the external explanation, and from the internal theory of science to the external theory of society, is a step from taking the autonomy of science for granted to the negation of such autonomy within the sociological reduction.

In the critical reconstruction, the autonomy of science is again at the center of the inquiry, but while previously taken for granted, the possibility of such autonomy is now considered as a problem against the background of the explanatory reconstruction. In short, the negation of scientific autonomy involved in the explanatory reduction is itself negated within the critical concern with paradigmatic change.

In order actually to function critically as such, the "cognitive map" of the explanatory efforts will thus have to be comprehended in the dialectical context of reproduction and change. So far as the possibilities of such dialectics are not communicated, therefore, the critical pursuit may be seen to have failed. Hence, the realization of pedagogical change leans - as far as this study is concerned - on the hope that we - reader and writer - may

be able to establish a common framework of conceiving the dialectics at stake.

The overall structure of the study may be simply described as mirroring the questions of "What?", "How?" and "Why?" in three consecutive parts. Less superficially, this tripartite structure, as well as the internal structuring of the separate parts, may be seen to reflect an ambition to make the evolution of the study clear in terms of a successive transition from a "predominant" to a "critical-dialectical" perspective on the phenomena under consideration. Thus, the structure is designed to hopefully elucidate the particular process of this study towards a deeper and more fruitful appreciation of the complexities of certain theoretical issues.

Part I seeks to provide an "ostensive" definition of research on teaching within the predominant paradigm by directing attention to a number of cases taken to be representative of its major substantive concerns and stands to educational problems. This introductory description of what are primarily seen as certain significant instances of the formation of the paradigm is then followed in Part II by a more systematic reconstruction of some distinguishing features of its scientific methodology. Intended to give an account of how research is or should be conducted according to paradigmatic standards, this part describes some general aims, methods and functions of research on teaching and attempts to epitomize its methodology by means of a few crucial concepts, which are later to be reconsidered in the explanatory and critical contexts.

The problem of reification, raised as an important issue within the descriptive reconstruction, serves as a basic mediating link to Part III, focused upon the efforts towards theoretical explanation and critique. These efforts center on the formulation of a theory of ideology in the topical context of scientific research, and the features of such a theory are discussed in different respects. Having pursued the aim of explanation at a general level, this part also contains some reconsiderations on certain phenomena presented in abstraction in Part I. Then, in the last chapter, some major issues are summed up, and some tentative proposals as to the development of dialectical pedagogy are made in the explicit context of paradigmatic change.

More detailed introductions will be given in the summaries at the beginning of each of the three parts. Consecutively read, these summaries may also provide a general summary of the entire study.

PART I. THE PHENOMENON OF RESEARCH ON TEACHING

Summary

In this part of the study, the twofold purpose is to present some general features of research on teaching and to establish a contextual framework for the analysis following in subsequent parts. Certain characteristic issues and basic themes in the tradition of this field of research are described, together with pertinent conceptions of the scientific task in general. Since a prime concern of this study is with the sociology of a specific paradigmatic orientation, the presentation pays particular attention to the ways in which certain aspects of research manifest themselves in relation to a wider social setting. While observing some formative features of the conduct of pedagogical inquiry, this part thus also considers some elements of their integration in a socio-historical context.

In chapter 1, the emergence of a scientific approach to educational problems in the USA during the early decades of the present century is discussed. The basic intention in this chapter is to direct attention to certain aspects in which this period may be regarded as the formative years of the predominant paradigm of research on teaching. The discussion focuses on the contributions of "scientific management" together with the "test and measurement movement" and the "social darwinism" to the emerging science of education, which is thus seen as influenced in different respects by these contemporary currents of social and scientific distinction.

In chapter 2, the general scope and overall concerns of the field of research on teaching are described, and an attempt is made to delineate some major approaches to the study of teaching within the different sub-fields of such research. Taking the main areas to pertain to curricular and teaching methods research, centered on the general issues of what and how to teach in school respectively, the presentation specifically observes the problems of educational effectiveness and efficiency as persistent themes within the paradigm. Thus, emphasizing certain major concerns in the development of research on teaching, the discussion tries to point out the paradigmatic char-

acter of specific modes of conceptualization and operationalization in this tradition of scientific endeavour.

In chapter 3, the previous concentration to the situation in the United States is extended by a presentation of some aspects of early Swedish research, taken to represent a congruent paradigmatic orientation. Formative research carried out during the post-war period of the implementation of the comprehensive school is surveyed, primarily in order to indicate some of these paradigmatic similarities. To exemplify the sequel of the early efforts in the US, a major study in the curriculum field is focused upon, and certain strategic features of the research methodology are observed in their relation to educational policy-making. While it is by no means intended to provide a comprehensive account of these endeavours, this chapter primarily serves to point out some elements of the problematical relationship between science and policy formation in the context of education.

Finally, in chapter 4, certain aspects of the general rationale and summary results of a specific research project are presented. This project, concerned with the teacher's role and education, is considered as having a bearing upon several of the main issues discussed in this study, and it is later used occasionally as a case in point. The basic intention of this chapter is to exemplify, from the vantage point of a specific research undertaking, how considerations on the nature of the scientific task may raise questions as to the adequacy of certain methodological techniques within the predominant paradigm.

Hence, primarily serving the purpose of setting the stage for the analysis to follow, the account in this part of the study of the phenomenon of research on teaching does not pretend to provide for either methodological or historical comprehensiveness. However, by focusing on certain central issues in the tradition of such research, and its integration in a wider social context, the presentation may hopefully create a fruitful introductory basis to the further reconstruction of the paradigm in later sections of the study.

1. The Emergence of a Science of Education

At the turn of this century, the US educational system was in turmoil. The generally acknowledged progress of the preceding decades in the establishment of an adequate institutional and philosophical foundation for education in the USA was rapidly coming to a halt. The vast and accelerating transformation of society in terms of large-scale mechanized industry, bureaucratized administration, extensive immigration, and other profound changes raised new demands that required accommodation in prevailing programs of schooling and training. The professional preparation of teachers, the organization of the schools, the instructional methods and materials, the curricula, in short, the entire system of education was fast becoming outgrown (Callahan, 1972; Cremin, 1964; Seguel, 1966).

Educationalists of all kinds, professionals and lay-men, took part in the enterprise of transforming the school in its theory and practice. Opposing sides struggled for influence over the practical aspects of schooling, and heated debates were fought in newspapers and journals over the proper ideas of education. In this battle of intense passion and practical interests, a "science of education" was being born.

Along with the development of a general social and behavioural science, investigation into the phenomena of education rose to considerable proportions during a remarkably short period of time. The first study of the condition of the schools to rouse broad public interest was probably the one carried out by J.M. Rice in the late 1890's. On behalf of the journal "The Forum", Rice made an extensive study of the nation's schools, and his findings were not very encouraging to either politicians or teachers as they were generally described as ignorant, unqualified, and largely responsible for a school in which drill and rote repetition of meaningless verbiage dominated. A conclusion reached by Rice was that the fundamental issues concerning the objectives of public education, and the efficient means to reach these objectives, were subjected to mere opinion, while the proper way to deal with

these problems would be through scientific investigation. By means of scientific inquiry, he argued, the standards to be striven for as well as the adequate methods to fulfill these standards could be settled (cf Cremin, 1964; Kliebard, 1973).

The problems of the curriculum were critical. New contents were constantly being introduced in a haphazardous way, creating pressure and confusion, and the emphasis on memorizing and the lack of conscious methods of instruction made the situation even worse (Seguel, 1966). Anticipated by Rice, the debate gradually focused on the issues of "waste" and "efficiency". Without proper ideas about the aims, without competent teachers, without efficient methods and so on, the school was seen as wasting not only potentials for progress and individual success, but the tax-dollar as well. Thus "effectiveness", "efficiency" and "economy" became the catchwords of the debate and the vigorous efforts to improve on the practices of schooling and teaching. Around 1910, the stage was set for the launching of a new and revolutionizing method to deal with problems of this kind: the method of "scientific management" or the "Taylor System" developed within industrial management.

The practical implications of this new method for the administration of the schools were enormous, as Callahan (1972) has described in detail. Its influence on the emerging science of education and the mode of conceptualizing educational problems was also profound, notwithstanding the fact that some educationalists were bitterly opposed to the method.¹⁾

A prominent figure in this "scientific movement" was Professor John Franklin Bobbitt. In 1912 he published an article in which he described the operations of a school according to the "recently developed principles of scientific management" (Bobbitt, 1912). The school, like an industrial plant, should "use all the plant all the available time", "reduce the number of workers to a minimum by keeping each at the maximum of his working efficiency", "eliminate waste" and "work up the raw material into that finished product for which it is best adapted", and Bobbitt attempted to show how this could be done within the school.

The methods of "scientific management", adopted to education, were seen as a development that could provide a firm answer to the persistent question as to which knowledge was "of most worth", a question framed by Spencer in these terms more than half a century earlier and frequently referred to in the contemporary debate.²⁾ Scientific knowledge was gradually appearing as

1) John Dewey's position in these controversies may be considered as of particular interest (cf Wirth, 1974).

2) See Kazamias (1960) for an overview of the educational debate in this context.

of most worth, and the science of education was to spell out its implications for effective schooling and teacher education. It thus became an objective of scientific research to formulate the basic principles of the curriculum and the general ambitions were set by Professor Bobbitt:

"(1) As a foundation for all scientific direction and supervision of labor in the field of education, we need first to draw up in detail for each vocational or social class of students in our charge a list of all the abilities and aspects of personality for the training of which the school is responsible. (2) Next we need to determine scales of measurement in terms of which these many different aspects of the personality can be measured. (3) We must determine the amount of training that is socially desirable for each of these different abilities and state these amounts in terms of the scales of measurement. (4) We must have progressive standards of attainment for each stage of advance in the normal development of each ability in question. When these four sets of things are at hand for each differentiated social or vocational class, then we shall have for the first time a scientific curriculum for education worthy of our present age of science" (Bobbitt, 1913, p 49).

The focus on the selection and construction of subject matter reached a definite formulation in 1918 with the report of the National Commission on the Reorganization of Secondary Education (cf Thayer, 1965). The Commission stated that in order to determine the main objectives of education in a democracy, it was necessary to analyze the activities of the individual in the family, in vocational groups, in civic groups, and so on. Education had to be organized around these various activities of the individual, and learning was seen as a matter of relating specific responses on the part of the individual to scientifically established relevant social situations. The curriculum should consequently be organized according to these scientifically determined objectives.

The same year, 1918, Bobbitt published his book-length analysis of the scientific construction of curricula. Here the principles of scientific management were related to a social and educational philosophy. The general issue was the problems of social progress and the place of education in the transformation of society. According to Bobbitt, education had not only to follow the path of social progress, but also to set the pace for such progress. Basically, however, the school had to adapt to the needs of a society in progress, and in meeting these needs the curriculum would have to rely on the scientific analysis of educational objectives.

Bobbitt (1918) recognized the conflicts between different schools of thought within education and, in relation to the views of the "culture people" who were seen as mainly concerned with the subjective results of education in terms of "the ability to live, rather than the practical ability to produce" (op cit, p 3), he was convinced that an adequate theory would have to acknowledge both aspects. The opposing sides in the heated debates of the time were bridged, in Bobbitt's views, by the recognition of the fact

that the conflicts were mainly due to the concentration to one of two "levels of functioning, two levels of educational experiences, both of which are essential to fulness of growth, efficiency of action, and completeness of character" (op cit, p 6).

To Bobbitt, the two aspects represented the "play-level" and the "work-level", and education had to deal with both. However, having stated this, Bobbitt continued his arguments in a way that makes it perfectly clear to the reader, that the "play-level", epitomizing various "un-scientific" ideas of education, was mainly a means to the more efficient fulfillment of the needs at the "work-level".

The primary concern of Bobbitt's analysis was the curriculum as the organizer of the rest of education. While acknowledging that the scientific method was being developed for every important aspect of education, "all the science in the world" applied to these aspects could not build an efficient education, unless the most important factor, the curriculum, was developed by scientific technique (op cit, p 41). Bobbitt described the meaning of the curriculum:

"The word curriculum is Latin for a race-course, or the race itself, - a place of deeds, or a series of deeds. As applied to education, it is that series of things which children and youth must do and experience by way of developing abilities to do the things well that make up the affairs of adult life; and to be in all respects what adults should be" (Bobbitt, 1918, p 42).

Bobbitt took on the task of formulating a scientific theory of the intricate problems of the curriculum to satisfy the needs of efficient education and build an adequate social philosophy of education:

"The central theory is simple. Human life, however varied, consists in the performance of specific activities. Education that prepares for life is one that prepares definitely and adequately for these specific activities. However numerous and diverse they may be for any social class, they can be discovered. This requires only that one go out into the world of affairs and discover the particulars of which these affairs consist. These will show the abilities, attitudes, habits, appreciations, and forms of knowledge that men need. These will be the objectives of the curriculum. They will be numerous, definite, and particularized. The curriculum will then be that series of experiences which children and youth must have by way of attaining those objectives" (Bobbitt, 1918, p 42).

The social philosophy of Bobbitt was straight-forward. Seeing modern society as an evolution from primitive society with its in-group virtues and out-group hostility, he argued that the fundamental problem was to get people in different groups to realize the common good. Modern society was seen as characterized by functional differentiation which "naturally" put different groups, e.g. employers and employees, in opposition to each other. The division of labour had created hostility between groups, but yet these groups were dependent upon each other.

"And since the problem at bottom is one of creating subjective attitudes

and valuations, it is mainly a problem for the educational profession. And the first problem - a most baffling one - is to draw up a curriculum that will with certainty forge an enduring and vitalized large-group consciousness" (Bobbitt, 1918, p 130).

As work was becoming more interdependent with regard to the activity of different groups, it was essential that the school emphasized co-operation, especially in specific problem areas. This was not just a question of technical competence, but also of having the right attitudes and the right understanding of social life. This view of Bobbitt's was seen as relevant also for the teachers and other workers in the schools, as they work to put together the right product - the ideal pupil-adult. Everyone involved had to have the "right mental attitudes" towards the work (op cit, p 82).

A problem in the practical construction of curricula was that people sometimes do not agree upon what is good or best. However, Bobbitt contended, science can begin with such aspects upon which people do agree in order to expand eventually this area of consensus. Taking the injurious and destructive labour conditions into account, he maintained that it was the purpose of education to remove these circumstances through general enlightenment and the establishment of a basis of mutual understanding.

"Education under the circumstances has, therefore, a double task to perform: (1) to act as a primary agency of social progress, lifting the occupational world to a higher and more desirable level; (2) to do this by educating the rising generation so that they will perform their occupational functions in a manner greatly superior to that of their fathers" (Bobbitt, 1918, p 64).

Bobbitt's views on teacher education were elaborated in another of his major works on the curriculum (Bobbitt, 1924). The method of establishing a scientific basis of teacher education was, at that point, very much the same as the one he had developed before in following the work by Taylor within industry. Teacher education was seen as a vocational training, and the proper method of scientific inquiry was that of "job analysis". The analysis would consist in the study of the tasks the competent teacher carried out in his work, and the abilities to perform these tasks would constitute the objectives of teacher training.

At about the same time, another professor of education, W.W. Charters (1923), published a book on curriculum construction, in which the method of job analysis was elaborated in detail. The method was also put into practical use in a very penetrating study of the activities of teachers, carried out by Charters and D. Waples during the 1920's. This study, "The Commonwealth Teacher Training Study", set out to investigate scientifically the traits and activities that define good teaching, and the results were aimed at providing information for the construction of a new curriculum for the education of teachers. The study analyzed the traits and activities of teachers

as evaluated by experts on teaching, and sets of behavioural components were constructed on this basis. After a massive effort, involving thousands of informants, 1010 categories of teacher activity and 83 main categories of traits were established (Charters & Waples, 1929). On the basis of these results, the institutions of teacher training would have the possibility of developing their programs in accordance with the realities of actual teaching.

There is perhaps no need to exemplify further the specific meaning of "science" imputed to empirical research on teaching in these early studies. The scientific construction of curricula motivated studies into the most detailed aspects of teacher behaviour, and a persistent search for the scientific definition of good teaching was put into motion. The leading figures of the "scientific movement" and their work, as well as later repercussions of different sorts, have been rather thoroughly described within the history of education (e.g. Callahan, 1972; Cremin, 1964; Seguel, 1966; Thayer, 1965). What is also of interest here, however, is the general context of the "scientific movement" in terms of other aspects of research and philosophy related to education.

There are, in particular, two aspects that are worth mentioning since they seem to have been intimately related to the very plausibility of the "scientific management" within education. The first concerns the simultaneous developments in the psychology of learning, while the second refers to the then dominant social philosophy.

The "scientific management" of education developed in close connection to what is often referred to as the "test and measurement movement" in psychology. In particular, the work of Edward L. Thorndike was decisive to the prosperity of the kind of educational research that has been described above. Not only could this research benefit directly from the statistical genius of Thorndike, but also, and more importantly, his contributions to the psychology of learning and individual differences could serve as crucial complements to the research on curriculum and teaching. Thus, the "test and measurement movement" provided the necessary means for the classification of individuals into manageable groups for further differentiation within education; for the choice and design of teaching aids; for the organization of teaching, and so on.

"Indeed, while Dewey wrote and taught philosophy, Thorndike wrote the dictionaries, textbooks, and teacher manuals used in the elementary and secondary schools of America. He published some fifty books and four hundred and fifty monographs, and taught thousands of teachers and administrators. From his tireless pen flowed a prodigious number of prescriptions: educational maxims and scales of achievement in arithmetic, reading, English, drawing, composition and handwriting. In short, Thorndike not only influenced

what was taught and how it was taught; he also supplied the criteria for evaluating and standardizing the process" (Karier, 1967, p 151).

Besides the complementary ideas and practices of behavioural psychology, research on curricula and teaching was supplied with a great source of direction, as well as justification of its methods, in the then current social philosophy. The diffusion of social darwinism in American thought of the time was extensive (cf Hofstadter, 1962), and these ideas were apparently congenial also to many educationalists. Evolutionism flourished in philosophical writings as well as in the more practically concerned studies on education, e.g. the ones by Bobbitt.

It was in this context that the ideas of a "socialized" education attained their impetus. It was to be the task of education to contribute to the evolution of the species and to the great progress of society, and these notions were thematized in different ways in the writings of theorists like Ellwood, Snedden and Peters, to only mention a few.

In 1913, Ellwood, a distinguished sociologist concerned with educational problems, expressed thoughts like the following.

"Education exists to adapt individuals to their social life. It is for the purpose of fitting the individual to take his place in the social group and to add something to the life of the group... This work is not, at least in complex civilizations like our own, one which we carry on simply in order to achieve social perfection, but it is rather something which is necessary for the survival of large and complex groups... The task of social regeneration is essentially a task of education" (Ellwood, 1913, pp 359-360).

And, furthermore,

"... education is the last and highest method of social evolution... (Still) organized authority in society, or social regulation by means of authority, must indefinitely persist and perhaps increase, rather than diminish; but the latest and highest method of social evolution is not through biological selection nor through the exercise of despotic authority, but through the education of the individual, so that he shall become adjusted to the social life in habits and character before he participates in it... The educator should conserve education as the chief means of social progress, and education should be directed to producing efficient members of society ... No doubt, also, the socialized education of the future will emphasize the adjustment of the individual to the industrial order of society, because it is necessary that individuals shall be producers if they are to be efficient citizens" (Ellwood, 1913, pp 361-363).

Social darwinism fitted the emerging social order well enough to survive as a major social philosophy for about a hundred years, surviving indeed well into the mid 20th century. In some areas of educational philosophy, it seems that social darwinism continued its influence in the US up to the time of World War Two.

At that time, Peters (1942) published his book on the curriculum of democratic education and his analysis is interesting in the present context, not only as an indication of the persistence of social darwinism, but also as a

continuation of the practical endeavours within the field of curriculum construction. Peters referred explicitly to the work of Bobbitt, and the similarities between his book and Bobbitt's (1918) are extensive. Both were concerned with the social needs of education and the efficiency of education in fulfilling these needs. Their ideas of learning and the individual were also very much the same, viewing education as they both did basically as a preparation for work in terms of adequate responses and habits.

Both authors presented their theories as comprehensive syntheses of what was seen as opposing ideas of education; the "culture-focused, child-centered, progressive" and the "scientific, systematic, social-need-centered". Bobbitt and Peters meant that they integrated the different strands, doing justice to both, or, as Peters (op cit, p v) put it, that he "out-progressived the progressive".

Interesting as Peters work thus is in pointing to the persistence of ideas formulated within the early "scientific movement", it is perhaps even more so in its further development of some of these ideas. This development is aptly pin-pointed in the difference between the titles of the two books, Peters' (1942) and Bobbitt's (1918); Peters was at pains explaining that the ideas were "democratic".

Defining democracy in terms of "liberty, equality, and fraternity", Peters (op cit, p 124) was forced to conclude that this state of affairs did not exist in the US - or anywhere else - except in meager degree. However, democracy must be striven for and be attained "asymptotically". This meant paying a high price because democracy was "unnatural" and had some "very disconcerting disadvantages".

"First, it is a most inefficient form of social organization... And, second, democracy is a quite unnatural state of society. It seems to be instinctive on the part of common people to look up to leaders and to crave authoritarian direction... It is not democracy but aristocracy that is the natural order of society. Democracy is an artificial achievement... All the institutions and practices of modern civilization which mark men off from the brutes are the product of centuries of achievement in teaching men unnatural ways of behavior - ways that implement intelligence and decent restraint instead of the tooth-and-claw laws of the jungle. So democracy, since it is a high order of society, is an institution for which we must forever have to fight" (Peters, 1942, pp 126-127).

If further evolution towards better states of society was to be at all possible, it was through the gradual and patient taming of human nature. And, to be sure, evolution-meant the gradual improvement - asymptotically - of the existing fundamental characteristics of democracy. More and better democracy would be achieved through the development of existing forms of democracy, and the important function of education was to bring about new and better attitudes and values in this respect.

Peters, as Bobbitt before him, formulated his version of social darwinism and the "socialization" of education against a background of war. This seems to have influenced their actual writings primarily in relation to the discussions on human nature and natural out-group hostility, but neither Bobbitt nor Peters disregarded the evils of the prevailing social order. Thus, they both discussed the "disadvantages" of competition, and ultimately the horror of war, as a "dysfunction" of an economic system. This does not, however, seem to have shaken their faith in education as the general solution to the problems.

Peters (1942) was particularly concerned with the effective reconciliation of democracy and social control. He contended that democratic control is based on the restraints that the individual imposes upon himself. And, again, it was the purpose of education to help the individual to develop such proper ideals and attitudes. Also, he found affirmation in "later scientific research" to the effect that children could effectively be prevented from growing into adulthood with "needlessly warped personalities and needlessly blunted intelligence" (op cit, p 142).

The role of the science of education became crucial to the mergence of democracy and social control. Seeing the essence of science as localized in the degree of sophistication with which generalizations are made about the facts of social life, as compared with mere common sense, Peters (op cit, pp 92-94) stated that the value of science was dependent upon the actual stability of nature, including human nature, from today into tomorrow. Finding evidence to this effect, he (op cit, p 98) concluded that there existed in fact a sufficient uniformity in human nature to justify statistical generalizations that could be used efficiently in human and social affairs but, even so, a problem remained: Was it the democratic way?

Since no restraints should be placed upon the individuals within a democratic order, except those which they choose to place upon themselves, the results of science should not be imposed upon them or the schools, and this could, of course, create problems in the implementation of scientific knowledge as to the efficient forms of education.

"But it is not necessary to believe that in a democratic order individuals will be hostile to their own success, or even indifferent to their own success. On the contrary, it is reasonable to expect that such individuals will wish to get along, to achieve, to push into the profile they have imaged for themselves. Certainly this is true of persons characterized by so much exuberant energy as healthy youth normally possess" (Peters, 1942, p 99).

The pupils were not to be forced to accept any of the scientific findings about which activities and topics were highly regarded by most people, nor to adjust to the different tests of prevailing norms. What science had to offer was merely suggestions and not prescriptions. But, of course, in

practice the pupils would accept many of them, because it was in their own best interest to do so, and thus the problem of reconciliation was solved. The use of scientific research was seen as entirely compatible with the democratic technique (op cit, p 100). And so it followed that Peters, like so many before him, could safely attend to the practical task of curriculum construction and implementation of the effective "socialized" curriculum, in this case through the analysis of social competences and its resulting "blueprints" of social activity.

2. The Field of Research on Teaching

It was only consequential that the efficiency experts within the "scientific movement" in education would turn also to the teachers and their methods of teaching in the crusade against inefficiency and wasteful practices. Already before the turn of the century, Rice had pointed at the incompetencies within the teaching profession and at how the teachers contributed to the general waste of educational resources. With the work of Thorndike and others within the "test and measurement movement", sophisticated means were developed that could be used for the scientific accountancy of wasteful teaching. Gradually, the teachers became a prime target for the general application of the great panacea of scientific management within education.

The work on the curriculum was conducted also with the aim of providing criteria on the basis of which teachers and their methods of teaching could be evaluated. For instance, Bobbitt (1913) maintained that efficient methods were dependent upon definite standards. The teachers and their supervisors had to know exactly what they were striving for in order to do an efficient job.

Similar thoughts were expressed at that time by Thorndike, who tirelessly argued for the blessings of science also in the determination of teaching methods. In general, efficiency within the profession of teaching was seen by him as a matter of the degree to which it became scientific. Teachers had to direct their daily work "by the scientific spirit and methods, that is by honest, open-minded consideration of facts, by freedom from superstitions, fancies or unverified guesses" and the leaders of education likewise by "the results of scientific investigation rather than by general opinion" (Thorndike /1906/, 1962, p 63). In particular, the science of psychology could contribute to efficiency in two ways according to his view; first, teaching methods should be consonant with the child's nature and the laws of learning as established by psychology, and second, the results of learning could be used to evaluate the efficiency of particular teaching methods in different

educational settings (cf Joncich, 1962, p 6).

In the present context, we will just take notice of one element of the quest for efficiency during the early decades, and this concerns the technique of efficiency ratings. For these ratings, scales were developed to ascertain the degree of efficiency in next to all plausible aspects of the activities of teachers, students, supervisors, and even janitors in the schools (cf Callahan, 1972, p 108).

The activities involved in teaching, and their different requisites, were analyzed and quantified by researchers, consultants, superintendents and others, as well as the teachers themselves. A typical example of the rating scales in use would list, often in a very detailed form, the personal characteristics of the teacher and the different categories of activities that were seen as constituting the teacher's profession. One of these scales, constructed by A.C. Boyce, an associate of Bobbitt's, was seen by some as "the clearest analysis of the whole subject" (Callahan, 1972, p 105) and it was made up of the following categories: "personal equipment", "social and professional equipment", "school management", "technique of teaching", and "results".

These kinds of analyses and descriptions of the teacher's occupation are of interest here, not primarily as historical accounts of how teaching has been conceptualized, but as indications of the persistence over time and educational systems of certain specific features of the common view of teaching and teachers. For instance, the categories described above, as well as the more specific ones within these, pertaining to an analysis carried out more than half a century ago in the US, show a remarkable resemblance to some contemporary results on the subject, e.g. those described by Löfqvist (1969) in relation to an analysis of current official documents on the Swedish comprehensive school. Descriptions like these frequently appear in the literature on teacher roles, and yet very little seems to be known of their origins and functions. Why certain views on teachers and teaching appear in the analyses, and what consequences they have, if any, in actual teaching, are questions that seldom seem to be asked within this tradition of research. This issue will be further discussed below.

Moving forward from the early decades, it becomes apparent that a very large number of studies have been carried out in order to formulate "the teacher's role" in terms of the demands placed upon the teacher in various situations. Consequently, the role has been investigated within a number of conceptual structures, as exemplified below.

Thus, Sorenson et al (1963) suggest the following teacher roles: adviser, counsellor, disciplinarian, information giver, motivator and referrer, while

Blyth (1965) describes the roles of instructor, parent-substitute, organizer, value-bearer, classifier, and welfare-worker. Trow (1960) describes "administrative and executive roles" like disciplinarian (policeman), measurer and record keeper (clerk), learning-aids officer (librarian), programme director (planner) and "instructional roles" like motivator, resource person, evaluator and adapter. More or less similar listings of the teacher's roles have been presented by Waller (1932), Hoyle (1969), Soles (1964) and in many other studies in the field, some of them described by Wallen & Travers (1963).

The role of the teacher has also been subjected to studies with a broader approach, in which the classroom interaction has been related to a wider social context. The general point of departure has been that teaching takes place within the framework of a particular institutional setting, exercising its influence upon what happens in the classroom. Compared to the previously mentioned research on the teacher's role, these studies have a more sociological character, being based mainly in the use of various structural role models. An overview of this kind of research is presented by e.g. Musgrove & Taylor (1969).

Also within this somewhat wider framework, many suggestions have been offered as to the ways of structuring the role of the teacher. Ottaway (1964, pp 186-89), for instance, writes about the teacher as academic specialist, methodologist, character-trainer, member of a school staff, and member of society. These categories correspond fairly well to a description of the "occupational functions of the teacher", which we will return to later, structured into aspects called "cognitive", "method-material", "social-emotional", "co-operation" and "development" (Fritzell, 1974a).

Charters (1963) observes the tendency in research on the social background of teaching to focus on the expectations placed upon the teacher in his or her social environment, while merely assuming certain effects of these expectations on actual social interaction in the classroom. As to the basic hypothesis involved in this research, that the definitions of teacher-pupil relationships held by significant persons in the teacher's social milieu shape the manner of the teacher's conduct in the classroom, Charters (op cit) is unable, in his review of the field, to point at any empirical evidence in its support. On the other hand, however, there is no shortage of social-psychological theories which, at an abstract level, affirm the adequacy of propositions to the mentioned effect.

Biddle (1969, p 1440) likewise discusses the common assumption of a direct correspondence between research findings pertaining to role expectations and role performance, and he directs attention to the "startling lack of infor-

mation" in this respect, since so far no study had actually been reported in which expectations were measured and the corresponding teacher performance was directly observed.

The implicit contention in much research on teacher roles seems to be that phenomena like "job satisfaction", "teacher happiness", "teaching problems", etc constitute major dependent variables in relation to the forces operating in the teacher's social environment, and that these phenomena, in their turn, can be taken to be related in "obvious" ways to the teaching-learning processes. As the available knowledge of these relationships is actually far from substantial, however, conclusions of this kind seem to be too hastily drawn, as e.g. both Charters (1963) and Biddle (1969) point out.

If much of the traditional research on teacher roles seems to have been carried out on the basis of dimly conceived implicit notions of the relationships between verbal or written statements of role descriptions and prescriptions, on the one hand, and actual teaching, on the other, the issue of actual teaching and its correlates has been approached within those other areas of research which are commonly referred to as concerned with teacher effectiveness and teaching methods. These three areas of research are often seen as making up the field of research on teaching, and they are, for instance, featured in separate articles in the Encyclopedia of Educational Research (Ebel, 1969a).

The distinctiveness of these areas is, however, not very clear. Medley & Mitzel (1963) argue that the kind of research which is most worthy of the name methods research is the search for effective patterns of classroom behaviour; Gage (1969) writes that a teaching method is in some respects comparable to a role; Biddle (1969) observes that the major interest in research on teacher role-performance stems from a concern with the effects of teacher behaviour on pupil learning, and so on. Thus, it seems that all the areas may include efforts like those described in relation to the concern with role-expectations within the area of teacher roles, and while they may be differentiated from each other in terms of distinguishing conceptual systems, they have in common a focus on teaching effectiveness and efficiency. Whatever the label attached to the various areas of research, and whatever their strengths and weaknesses, it seems that their crucial features are typically apprehended as matters of the efficiency of teaching in relation to educational outcome. As a consequence, it is possible to state that more than 10 000 studies on this general issue have been conducted so far (Good, Biddle & Brophy, 1975, p 12).

At the heart of the concerns of research on teaching lies the fascinating question of what constitutes "good" teaching. In the early decades, "good"

meant "economical" more than anything else, and a frequent criterion of teacher effectiveness in early research was simply whether the teacher retained or lost his job (Withall & Lewis, 1963, p 687). However, these rather clear-cut notions have been superseded by all kinds of measures in later research on teaching. The most frequent criteria have probably been those related to student achievement and the ratings of teaching by supervisors or others considered as educational experts, and a large portion of research has been focused on the relationships between such criteria and various characteristics of the teachers. These characteristics have included a very wide range of possibilities; from different measures of the teacher's personality or training to the asking of "good" questions or the "placing of one's thumbs in one's suspenders" (Kliebard, 1970, p 34).

The perceived necessity of establishing an adequate criterion of effectiveness in an unambiguous manner, and the notorious difficulty in succeeding to do so, constitutes a persistent dilemma in research on teaching. If the criterion in use is not being accepted, neither will the definition of "good" teaching, and some research may thus stand or fall with the characterization of the criterion.

"A major obstacle to developing valid procedures for predicting teacher effectiveness has been the lack of a solution to the criterion problem. Investigations have shown with discouraging frequency that any two observers, whether or not in the educational field, are likely to disagree sharply in the appraisal of a particular teacher. The crux of the disagreement is pinpointed in the fact that any concept of teacher effectiveness is inevitably relative" (Sorenson et al, 1963, p 287).

In an effort to improve on this situation of vast ambiguity, the American Educational Research Association in 1952 presented a listing of what was seen as the most important criteria (cf Morrison & McIntyre, 1973, p 17). Topping the bill was the teacher's effect on the "pupil's achievement and success in life", "the pupil's achievement in subsequent schooling", and "the pupil's achievement of current educational objectives", and then the list ran through the criteria of the parent's and supervisor's satisfaction and all kinds of assessments of teacher characteristics. It should be obvious from such a listing that the solution to this basic problem does indeed not come easily to the tradition of research on teaching. We will also return to this issue later in the study (e.g. chapter 15).

While traditional research to a large extent has been centered around the study of the relationships between teacher characteristics and criteria of teaching success, this basic model has gradually been extended to include a number of other variables, e.g. pertaining to pupil and environment variables.

Thus, the common conceptual framework within the first Handbook of Research in Teaching is described by the editor as including three major

classes of variables and their interrelations (Gage, 1963, preface). "Central variables" in research on teaching are those which refer to the behaviour and characteristics of teachers. These central variables are divided into three categories; teaching methods, instruments and media of teaching, and the teacher's personality and characteristics. Another class of variables is made up by the "relevant variables" which are those that refer to antecedents, consequents or concurrents of the central variables. These variables are seen to cluster into two loci; social interaction in the classroom, and the social background of teaching. The third class of variables are called "site variables", and these are those which are typically held constant and thus used to define the situation in which other variables are studied. Two categories of site variables are mentioned; grade level and subject matter.

Parallel to the tendency of taking into consideration a growing number of relevant variables in the context of teaching, there has been an increasing interest in the study of actual teaching-learning interaction in the classroom. Whether conducted in the laboratory or in the "natural" setting, observation and theorizing, mainly in line with a "behaviour-control" or a "discovery-learning" model of teaching (Nuthall & Snook, 1973), have been geared towards the explanation and prediction of educational outcome on the basis of specific conceptions of the activities of teaching. Overviews of teaching methods research of this kind are offered by e.g. Gage (1963, 1969), Flanders (1969), McNeil & Popham (1973), Medley & Mitzel (1963), Rosenshine & Furst (1973), Wallen & Travers (1963).

Generally recognized problems involved in this research range from the technical issues of reliability and validity (cf Hargreaves, 1974) to a growing concern with the poor state of theoretical significance of many such studies (cf Wallen & Travers, 1963, Travers, 1973). Also, the crucial step from correlational to explanatory propositions, and the ambiguity of broad and generalized descriptions of teaching characteristics, are among the often voiced concerns of researchers in the field (cf Good, Biddle & Brophy, 1975). As a consequence, research techniques have been developed to cope with some of these problems and, for instance, concepts like micro-criteria and micro-teaching have entered the field (cf Gage, 1968, 1972).

The various approaches to the study of teaching can be summarized in different ways, e.g. on the basis of explicit or implicit theoretical models (cf Nuthall & Snook, 1973). A well-known distinction, which is often used to differentiate between modes of operation in terms of the establishment of knowledge of teacher efficiency, has been offered (by Stolurow, 1965) through the concepts of "modeling the master teacher" versus "mastering the model teacher":

"The first approach is that of studying the most effective teachers we can find in order to find out how they behave and what they are like so that we can attempt to produce more teachers like them. Many research workers see little promise in this approach. They recommend that we undertake instead to develop wholly new models of the teaching process designed for optimal effectiveness, regardless of their similarity to the way teaching now goes on in the normal classroom" (Gage, 1968, p 605).

In general, it seems that the tradition of research on teaching has focused upon two major issues. One is the concern with the criteria of effective teaching, on the basis of which the efficiency of different teacher characteristics or teaching methods may be ascertained. This research obviously has an important bearing upon the feasibility of reaching specified educational objectives, and in terms of the adequacy of various ways of defining such objectives, it is closely related to the problems of the curriculum. The other issue of research on teaching concerns the methods of teaching themselves and their relation to educational outcomes. This research constitutes a complex maze of different techniques and conceptual approaches, but yet it seems to have a common denominator in the search for "strong" theories, which may explain and predict teaching effects on the basis of classroom interaction and thus contribute to the efficiency of teaching, e.g. through policy-making and implementation in programs of schooling and teacher training.

3. Formative Research and Policy-Making on the Comprehensive School in Sweden

The transformation of the Swedish system of compulsory schooling has followed a distinctive pattern since the 1940's with regard to policy formation and implementation. The nine year comprehensive school has been established by legislation through a successive process of committee investigations, experimentation, public debate, decision-making and revision. In this process, the school committees, constituents of the general institution of committees often considered as a unique aspect of Swedish social reformism, have played an increasingly important role. Appointed by the government to inquire into crucial issues of policy formation, and comprised of politicians and educational professionals, these committees have analyzed the topical problems and presented their suggested solutions in official reports. These are later reviewed by various interest groups and to become a basis of the further processing of the issues in the Parliament. During the post-war formative years of the comprehensive school, a number of such committees have considerably influenced the character of policy formation, e.g. in terms of the establishment of proposals firmly anchored in political majorities. Overviews of the work of these committees have been presented by e.g. Dahllöf (1971), Husén & Boalt (1968) and Kallós & Lundgren (1976).

A significant feature of the school committees' mode of operation is to be found in their increasingly close liaison with educational scientific research. Efficient channels of communication have gradually been opened up between state agencies and the committees, on the one hand, and the growing body of academic research, on the other. The committees have commissioned research, and researchers have been called before the committees to discuss their projects and present their findings. Extensive research programs have been carried out within the official framework of the committees and, for instance, a number of academic theses have been published in this context. This close liaison has proven itself to be of great importance to the efficient functioning of the committees, a circumstance which has been frequently

affirmed, for example in the following passage from the main report by the 1957 School Committee:

"There has been in all countries with a developed school system an experience of a need for a permanent body to take care of the educational developmental and research work which is to improve the school. Experience has shown that this work cannot be conducted by the ministries or offices attached to them, the main tasks of which concern school administration and management. Consequently, particular bodies have, according to national traditions and conditions, been created for the developmental and explorative work which is directly geared at the needs of the school...

In most of the larger countries, educational developmental and research work is considered as an important part of the general development of the school. It lies close at hand here to point at the similarity between the school and other functions in society, primarily industry and commerce, with their often extensive departments for development and research" (SOU 1961:30, pp 114-115; orig. in Swedish).

The development of the liaison between research and the school committees can be exemplified by the contacts pertaining to one of the major issues in the debate on the establishment of the comprehensive school; the problem of school differentiation. In the context of the 1940 Committee, the issue largely boiled down to a matter of the "effectiveness" of different systems of transfer between primary and secondary schooling (Husén & Boalt, 1968, p 15). The Committee, itself comprised of educational experts and chaired by the minister of educational affairs, asked the university professors of education and psychology at that time to state their views on the scientific basis of this issue in terms of the mental development of children and adolescents. The professors unanimously concluded, on the basis of their general insight into these matters, that it was possible to select the academically more gifted pupils at the age of eleven. The practical and political implications of this conclusion, however, were not obvious and the various lines of arguments were to be continued within the framework of the parliamentary School Commission of 1946.

The Commission initiated an extensive research program to inquire into the character and interrelations of practical and academic abilities at different ages of school children. The general conclusion later reached by the Commission was that it was possible to diagnose academic aptitude at the time of the child's twelfth year. The research was reported within the auspices of the Commission (Elmgren, 1952).

The issue was, however, by no means settled and the 1957 School Committee likewise initiated a number of studies to elucidate its various aspects. A major investigation was conducted in the context of individual differences and school differentiation, and it was, like other studies, presented officially as performed within the work of the Committee (Härnqvist, 1960).

In this manner, educational research has become closely related to the

structure of committee investigation and policy formation. Extensive research undertakings have emerged in the context of the development of this structure, and information of potential interest to policy-making has thus been provided by investigations on a scientific basis. Obviously, the committees have tried to make use of this information at strategic points in the process of policy formation, as indicated by the following statement.

"Neither the Committee nor the commissioned researchers have counted on that the research could cover all or even the major part of those psychological-pedagogical factors which are important to the solution of the pedagogical and school-organizational problems. Instead, the task of the research program has been to illuminate some aspects of certain central, often controversial issues within the scope of the Committee's work and to give new and more secure points of departure for the continued treatment of the problems in the work of the Committee" (SOU 1961:30, p 116; orig. in Swedish).

The 1957 School Committee was appointed by the government to summarize the experiences won in the experimental phases of the establishment of the comprehensive school and to further inquire into the character of schooling in a democratic society. A major issue of the Committee's concern was centered around the problems of the aims and objectives of compulsory schooling, and thus the Committee came to engage itself also in research on these matters.

Just prior to the appointment of the 1957 Committee, the Industrial Council for Social and Economic Studies (SNS), an organization financed by Swedish industry and business interests, had launched a research project with the purpose of investigating some parts of the school curriculum in relation to the demands and needs of various jobs and occupations. An agreement had been made with the Stockholm Institute of Education to the effect that research was to be conducted on the curricular content of the subjects mathematics and Swedish in the last grades of the school. The emphasis from SNS was on the qualifications of the pupils that were required for adequate performance in different occupations, while the researchers also found an interest in investigating the general needs of individuals as citizens in contemporary society.

This research proved to be well adapted to the work of the School Committee, and it was decided that the SNS project was to be co-sponsored by the Committee. Arrangements were made to extend the project to include the subjects of physics, chemistry and civics and, for the first time in Sweden, extensive empirical research on the curriculum of compulsory schooling was under way.

Thus, scientific knowledge was to be ascertained concerning teaching practices and learning outcome in relation to the needs and requirements of adult life. In the present context, an interesting issue pertains to the

general view of the character of scientific methodology involved in these efforts, particularly in relation to the ameliorative motives of concern to the agencies of policy formation.

"It has been a first point of departure of the entire research project that educational research in principle can contribute to the resolution of those questions concerning aims which pertain to a revision of curricula. As equally self-evident, however, it has stood out that curricula cannot be established solely by means of empirical educational research. What is at stake here are decisions concerning aims which are beyond the scope of scientific work... Decisions pertaining to questions of general aims as well as to questions concerning more limited curricular issues, which are ultimately determined by the general aims of the school (...), thus cannot be made within the framework of educational research, although it may in various ways influence the decisions. This may happen e.g. through the results of the scientific philosophy of up-bringing (...) but of course also through empirical investigations of problems which are suitable for such studies and which may be relevant to such decisions. Not least the last twenty years in Sweden offer several examples of how the state authorities, through commissioning research, have looked for the results of psychological and pedagogical research on topical issues of school planning, either in the form of syntheses of the state of research in different areas or of original investigations" (Dahllöf, 1960, pp 37-38; orig. in Swedish).

In general, the relationships between scientific methodology and the normative purpose of the context of inquiry do not appear to have been considered as problematical.¹⁾ The application of "previously worked out major methods of data gathering and compilation within social scientific behavioural research" (Dahllöf, 1960, p 45) was apparently seen as merely a matter of making use of certain "sociological techniques", which should not be confused with the practical problems of curriculum construction (Husén & Boalt, 1968, p 47). In terms of the actual methods in use, the approach largely corresponded to the endeavours of the early researchers on the "socialized" curriculum in the USA, as described in chapter 1, and the connection to that research was explicitly acknowledged.

"In general, these investigations can be considered as related to the activity analyses that, from 1915 and the time closest following and in connection to new currents of activity-pedagogy within pedagogy, were carried out with a direct target on curriculum planning by Jessup & Coffman, Clark & Rugg, Bobbitt and others... A difference compared with our investigations lies in the less systematical character of the earlier investigations as empirical field studies. Another difference is that our investigations are carried out with the background of a more neutral theory from an ideological point of view. As has been stated in the introduction, we regard the studied aspects of needs as to demands of knowledge prior to continued education, occupational demands and leisure demands, as some aspects which, with greater or lesser stress in one way or another probably will be in need of recognition in the coalescence of view-points, which by necessity precedes any suggestion of a new curriculum. The weighting of these and other aspects, however, is an issue which presupposes an evaluative phase and which thereby lies outside the framework of the empirical investigations" (Dahllöf, 1960, p 46; orig. in Swedish).

1) This point is discussed by Kallós & Lundgren, 1976, p 20

The methodology in use entailed, as a first step, an analysis of existing curricula, syllabi and textbooks in the grades and subjects at issue. Panels of educational experts were consulted in order to establish a manageable structure of the separate content elements, later to be included in questionnaires. Thus, for instance, the course content of mathematics was structured into 48 topics, and a questionnaire on Swedish was made up of 47 items within the areas of reading, vocabulary, abilities in using books, oral communication, composition, grammar, spelling, punctuation and Danish and Norwegian (Dahlöf, 1960, pp 502, 506). Teachers in schools receiving students from the compulsory school were then asked to evaluate the basic preparation of their students as to the importance and actual possession of the various pieces of knowledge and skills. The requirements and qualifications of those students who did not continue their education were assessed through questionnaire ratings by employers and employees. Supervisors of sub-professional personnel were asked to state the needs of training in the particular occupational context. Employees were asked to indicate how often they made use of specific skills, also in their leisure time, and to state the kinds of skills they did not possess but in fact needed. In addition, studies were made to establish the amount of knowledge and skills workers had retained from school, through the administration of standardized achievement tests. The participation of the employees was safeguarded through the support from the national association of management and labour unions.

Similar investigations to this one in mathematics and Swedish were conducted in the fields of physics and chemistry by Johansson (1962) and in civics by Bromsjö (1965).

The actual effects of scientific research on policy-making and implementation are hard to ascertain. The clues given by the 1957 School Committee, for instance, under the auspices of which the empirical research on curricula described above was carried out, are limited to general remarks. Thus, the investigations were considered to

"... constitute important complements in the assessment of which changes have to be made in existing syllabi and teaching methods in order for the desired changes in the aim to be effectuated" (SOU 1961:30, p 129; orig. in Swedish),

and they were seen to provide

"... an important foundation both in terms of general planning and in matters of detail. Also here, however, the results of the investigations have to be inserted in the totality through the support by evaluations of educational ends and means" (op cit, p 136).

However, while the practical results of scientific research may be especially difficult to establish in terms of the implementation of new policies and practices, the present chapter may have indicated two things.

Firstly, that a close liaison between scientific research and the state agencies of policy formation has been developed, which is likely to have influenced the character of the processes of policy-making in significant respects. Secondly, that within this liaison, the general understanding of the role of scientific research seems to have been that the scope of such inquiry, e.g. as a matter of the methodology of empirical research, is neutral to the processes of policy implementation. We will have the opportunity to return to these issues in later sections of this study. So far as the particular character of the scientific methodology in use is concerned, however, the following chapter will direct further attention to certain pertinent features within the context of a specific research project.

4. Curriculum Planning: The Case of the Project PIL

So far, we have discussed the emergence of a scientific method of empirical research on educational problems in the USA during the early decades of the present century. We have also taken a look at the character of some Swedish research on education during the period of the implementation of the comprehensive school. Furthermore, we have considered the scope and major concerns of different sub-fields of research on teaching, and have focused particular attention to the issues of effectiveness and efficiency and the various notions of the teacher's role which appear in these contexts. In this chapter, we will present an overview of a specific research project which in some basic respects relates closely to several elements of the curricular and teaching methods research previously described. One reason for presenting certain aspects of this project in some detail here is that it will later be referred to occasionally as a case in point. A further reason is that the analysis within the project which is of major relevance to this study was carried out by the present author.

The project started in the late 1960's and continued, in some of its parts, into the mid 70's. It was sponsored and partly initiated by the National Board of Education and conducted within the Department of Educational and Psychological Research at the School of Education in Malmö, Sweden. The project was called "Educational Program for Teacher Training" and given the Swedish abbreviation PIL ("Pedagogiken i lärarutbildningen").

In short, the original aims of the project, later to be somewhat modified, were to study the objectives and training needs within teacher education by means of job analysis of teaching; to develop programs and material for the educational training; and to study how different parts of the educational programs could be coordinated (cf Gran, 1970, 1973). In the present context, emphasis will be placed upon that part of the project which concerned the job analysis and the formulation of training needs (cf Fritzell, 1972, 1973, 1974a, b, c, 1975).

The general approach taken by the project was to study teaching and teacher training in terms of the formal organization of the educational system and, in particular, to inquire into the role of the teacher as defined by the normative structure of relationships between the teacher and other participants in this organization. The institution of education was seen as constituted by the functions provided for by the various groups of participants in their joint effort to carry out the educational aims, and the tasks delegated to the teacher in these respects were studied with regard to the normative expectations and demands placed upon the teacher within this context of functional requirements. The institutional organization was seen as an interrelated system of positions, definable in terms of normative roles, aiming at the fulfillment of the educational functions and each in its way contributing to the efficient functioning of the system. The teacher's occupation, being of focal concern to the project, was seen as deriving its distinguishing character from its functions in the institutional organization, and the general aims of teacher training was considered as a matter of the optimal provision for these functions by means of the promotion of adequate knowledge, skills, attitudes etc on the part of the teachers.

In this sense, the project approached the issues of educational planning and the relationships between the teacher's job and training on the basis of a more or less explicit role theory, the more detailed features of which we will discuss in chapter 6. In the following, we will consider the practical work of gathering data and information and, in particular, some of the main technical procedures and summary results pertaining to a rather extensive questionnaire study, designed to elucidate the character of the teacher's job and training.

Prior to this questionnaire study, some other studies had been conducted within the project and these were taken advantage of in the construction of the questionnaire. Thus, text analyses of official documents like policies and general curricula had provided a category system of demands placed upon the teacher (Löfqvist, 1969, 1971a), and this system was used as a general frame of reference in the determination of the content of the questionnaire. Also, interviews with persons in "contact groups" to the teacher, e.g. parents, pupils and teacher trainers, had been made, and a great number of expectations placed upon the teachers in those contexts had been recorded (Mårtensson, 1973). Furthermore, "critical-incident" investigations had been conducted in which student teachers had described problems they were faced with in their teaching practice (Löfqvist, 1971b). These preceding studies were all taken into consideration in the design of the questionnaire, and a

rationale was developed for their systematic inclusion in terms of item content (cf Fritzell, 1972, pp 10-28).

The questionnaire was divided into three sections, called A, B(1) and B(2), each featuring some 50 variables. Section A took its basis in the analyses of official texts, and this section was seen as providing a comprehensive account for the teacher's job at a general level of description. Section B(1) described more specific demands and expectations upon the teacher, established on the basis of the interviews. Section B(2) described rather detailed events in the context of actual teaching, based on situations formulated in the critical-incident studies. The character of these situations were such that some kind of action on the teacher's part was implicitly called for or expected. Thus, the three sections included descriptions of explicit or implicit demands and expectations on the teacher, and whereas those in section A were seen to refer to rather abstract features of the job, those in sections B(1) and particularly B(2) were taken to exemplify more concrete aspects of some of these abstract features.

The questionnaire items thus established were to be evaluated in relation to the following criteria. Two major aspects of evaluation were included in all three sections, although phrased somewhat differently in section B(2) due to its specific character. These aspects concerned the relative importance of the various demands and expectations, and the degree of adequacy of present teacher training in relation to these demands and expectations. In section A, two additional aspects were included; one pertaining to the likely future development of the job in terms of the importance of the items; the other concerning the possible ways of improving on the adjustment of the job to the general aims of the school (cf Fritzell, 1972, 1974b).

The two aspects of evaluation included in all three sections had seven-point scales attached to them, within which the respondents were to state their views on the importance of the tasks and the adequacy of present training respectively. The additional aspects in section A invited the respondents to choose among structured alternatives, and spontaneous comments were encouraged as to the future development of the job of teaching (cf Fritzell, 1972, pp 28-31).

The questionnaire was submitted for evaluation by four groups of educational reference persons to the teacher; two categories of school-leaders and two categories of teacher trainers. Specifically, heads and deputy heads of comprehensive schools, in-service training officers and consultants at the county boards of education, and lecturers in education, subject teaching, and teaching methods at the schools of education were chosen as respondents. Thus, two groups of educational experts in schools where the teacher's job

is actually performed, and two groups primarily concerned with the education of these teachers, took part in the investigation. The potential respondents were chosen by random sampling within the nation-wide populations, and some 240 persons were included in each sample. The response rate was approximately 80 % and thus some 750 persons responded more or less completely to the questionnaire. Due to its extensive character, the questionnaire was divided in two parts, sections A + B(1) and sections A + B(2), and each respondent was provided with one or the other of these parts. Thus, about twice as many respondents contributed to the data on section A as compared to either of the B sections. The questionnaires were distributed and returned by mail.

The specific procedures of questionnaire construction and of sampling, the formulation of variables and aspects of evaluation, analysis of sources and extent of non-response, accounts and discussions of validity and reliability, and other technical matters involved in the study have been reported in detail previously (see especially Fritzell, 1972, 1974b).

The compilation of data was carried out by means of computerized statistical analysis, including as a first step structural analyses in order both to formulate a compressed job description and to reduce the amount of data in view of subsequent analyses. It was considered of particular interest to study the structural character of section A in this way, since this section was regarded as picturing the full range of the teacher's tasks at a general level of description. To this end, factor analysis was employed, and here we will just take notice of some of the results. Considering the factors in the final solution as the "teacher's occupational functions", the analysis yielded the following results.

One function dealt with matters pertaining to the teaching of instructional subjects, and this cluster of variables was called a "cognitive function". Among the high-loading variables within this function were "convey knowledge", "have knowledge of the subjects taught", "use tests in a proper way", "be objective", etc.

Another function described efforts to promote the general development and welfare of the pupils, and this so-called "social-emotional function" included variables like "learn to know the pupils", "co-operate with the pupils", "create a pleasant working environment and a good spirit in the class", "be democratic", etc.

A third function, called "method-material", dealt with instructional techniques and proper ways of teaching, and among the variables within this function were "be proficient in using educational material", "take measures concerning teaching technique", "plan and prepare for the work", etc.

A fourth function, given the label "co-operation", was comprised of vari-

ables expressing expectations on the teacher to work together with other categories of persons inside and outside of the school and to fulfil specific obligations. Joining this function were "perform supervisory duties, participate in meetings and conferences", "co-operate with other teachers", "co-operate with institutions in society", etc.

A fifth function, called "development", described teacher tasks in providing for the adequate professional development of him- or herself and of the school in general, including variables like "keep in contact with educational research", "show a scientifically critical attitude", "contribute to and be responsible for the development of the school", etc.

Correspondingly, structural analyses concerning the other two sections of the questionnaire were carried out by means of factor analyses. The functions established on the basis of the B(1) variables, pertaining to expectations on the teacher formulated in interviews, concerned "pupil development", "teaching aims", "teacher engagement", and "methods". The functions established on the basis of the B(2) variables, pertaining to the critical-incident situations, concerned "pupil development", "disturbances", "engagement", "pupil differentiation", "pupil evaluation", and "pupil motivation" (cf Fritzell, 1974c).

Having settled the issue of how to structure the variables into manageable sets of "occupational functions", the statistical analysis could proceed to the next step, entailing analyses of variance in which the relative weight of the functions was to be ascertained, among themselves and in relation to the various subgroups of respondents. There is no need to describe the particulars of this lengthy process here, but we will only take notice of some of the general findings.

With regard to the first aspect of evaluation in section A, concerning the relative importance of the various general demands and expectations, a considerable difference was indicated between the so-called occupational functions. The differences extended well beyond statistical significance at the 1 % level and manifested themselves in an ω^2 -value of 23 % (cf Hays, 1969, p 325). The function pertaining to the social-emotional development of the pupils was given the highest rating, within the total group as well as within the different subgroups considered. The importance of this function was further emphasized in aspect 3, in which the respondents were asked to indicate which demands and expectations they considered most important in view of the future development of the teaching profession.

The second aspect of evaluation, concerning the adequacy of present teacher education in relation to the variables, showed a similar result from a statistical point of view. Teacher education was found to provide most

adequately for the functions referring to the methods of teaching and the cognitive development of the pupils (cf Fritzell, 1974b, pp 28-42, 50-57).

In the analysis of the data, the aspects of evaluation concerning importance and training adequacy were combined in order to arrive at an expression of what was called "training need". Granting that these aspects were interdependent in ways which were not easily ascertained, such a combination was nevertheless seen as a relevant basis of interpretation. No analyses of statistical significance were carried out, but the two aspects were juxtaposed and compared as to the average evaluations of the different functions. Thereby, it was clearly established that the major differences existed within the functions concerned with the social-emotional development of the pupils and the co-operative measures to be taken by the teacher, although the "training needs" in these respects were due to somewhat different backgrounds in terms of relative importance versus educational adequacy (cf Fritzell, 1974b, pp 42-49).

In the fourth aspect of evaluation in section A, the respondents were given the opportunity to suggest ways of approaching an optimal adjustment of the teacher's occupation to the general aims of the school, by claiming the priority of specific means within a structured set of alternatives. These alternatives concerned the possibilities of changing the aims of the school, of delegating certain tasks to some other agency than the teacher, of improving the pre-service or in-service training of the teachers, of affecting the priorities of the teacher in terms of time or interests, and, finally, the possibility that an optimal adjustment in fact corresponded to the present situation.

A major finding in this context was that while improvements within the functions referring to the cognitive development of the pupils and the methods of teaching were deemed feasible primarily through better teacher training, the alternative of changed priorities on the part of the single teacher was seen as more appropriate in view of the functions of co-operation and the social-emotional development of the pupils.

The existing situation was considered more favourable with regard to the cognitive function and the function concerning the development of the school and the teacher than with regard to the other functions. When the cognitive function was differentiated into two clusters, referring to the transmission of knowledge and skills, on the one hand, and measures taken by the teacher to reduce disturbances in the classroom, on the other, the number of respondents who found the existing situation adequate was about five times as great in the former case. The data on this aspect of evaluation further provided detailed information as to the possibilities of development in terms of the

entire variety of teacher tasks under consideration (cf Fritzell, 1974b, pp 58-70).

The data on sections B(1) and B(2) were analyzed in a manner similar to that pertaining to the first two aspects of evaluation in section A. Thus, the more concretely described functions, based on interview and critical-incident material, were also accounted for in terms of their relative importance and as to how they were regarded as being provided for within present-day teacher education. The findings have been reported previously, but they are of minor interest in the present context (cf Fritzell, 1974c).

At this point in the analysis of the data, the teacher's job had been described as internally structured into a number of functions, and the evaluative intensity with regard to these functions had been accounted for in different respects. However, the descriptions were given at different levels, in the sense that the functions were considered in more or less abstract or general terms. For example, while a variable in section A might concern the general task of "planning", and some variables in section B(1) might deal with planning in certain specific respects, this task might be referred to in certain practical situations of teaching in section B(2). This circumstance created a certain difficulty as well as a possibility of further analysis. Thus, for instance, to be useful in educational planning in different settings, the analysis of the job should preferably recognize both central and local aims and needs, and their interrelations. In order to provide for such information, it was seen as important to study the relationships between the levels of description. The more specific features of the job might elucidate practical implications of some of the abstractly formulated tasks, both in terms of structural composition and evaluative intensity, and a basis of integrating the various sources of information within the project at large might thus become available. On grounds of such considerations, it was decided that an effort should be made to establish the "net-balance" of such demands and expectations upon the teacher which were included at all three levels of description.

To this end, commensurable units of measurement had first of all to be formulated in order to make for adequate comparisons over the three levels. Intended to provide an empirical basis of such units, a new set of factor analyses was conducted with regard to the combined sections of variables, e.g. the variables in sections A+B(2). These analyses did not, however, render the desired results, since no relevant empirical relations were to be found between the A and B(2) sections of the data. While certain A variables appeared to be close to certain B(2) variables, in terms of apparent content, they nevertheless joined other A variables, which appeared as more dissimi-

lar. This result called for an interpretation, but as far as the aim of constructing commensurable units of measurement was concerned, other means had to be approached.

Resorting to more subjective methods at this point, the analysis had to build on the available data as to the structures within the sections and supplement these data by reasoned decisions as to the commensurability of different clusters of variables at the three levels of analysis. Thus, by means of a rather complex procedure (see Fritzell, 1975, pp 11-29), the following functions were established as relevant units of measurement in this respect: "cognitive transmission", "disturbances during instruction", "methods of instruction", "pupil problems", and "social-emotional pupil development". Clusters of variables pertaining to these areas of teaching were then used to study the evaluations as to importance and training adequacy in terms of the different ways of describing these tasks (cf Fritzell, 1975).

The evaluations regarding training adequacy were found to be quite consistent over the three levels, in that a rather homogeneous pattern appeared to the effect that teacher education was generally seen as providing most adequately for the functions concerning "cognitive transmission" and "methods of instruction". As to the importance of the various functions, however, considerable discrepancies appeared between the sections or levels. The most striking variation concerned the function pertaining to the general social-emotional development of the pupils. While being regarded as the most important among the more abstractly described functions at the A level, this cluster appeared as the least important among the more concretely described functions at the B(2) level. Instead, issues regarding instructional methods and individual pupils' problems of adjustment were seen as the most important at this latter level of description. Admittedly, the content of the "social-emotional function" at the B(2) level was limited to rather narrow aspects of the teacher-pupil relationships, and several items concerned the then topical issue of proper ways of addressing the teacher. Nevertheless, these items, as well as others referring to more "extra-instructional" matters, could be judged as important to the social climate of the classroom, and thus pupil development, to quite a different degree than indicated by the actual findings.

These findings constituted a dilemma within the framework of this particular study, and by implication also in relation to the general rationale of job analysis, especially in the context of educational planning. The logic of analysis, aiming at an empirically founded account for the job and its functional requirements in terms of training, was faced with a situation in which theoretical and practical demands called for a reconciliation of the

diverging findings. A "net-balance" of expectations upon the teacher had to be established, e.g. in order to formulate unambiguous aspects of training needs, but the actual findings seemed contradictory. Furthermore, educational planning on a scientific basis could not reasonably rely on the arbitrariness of verbal peculiarities, but all the findings had to be explicitly accounted for in a manner which surpassed such ambiguity. Thus, while problems of this kind did not seem to be attended to in the literature on job analysis, an interpretation of the actual findings had to be approached.

As mentioned above, the five functions used as units of measurement contained variables of a certain empirical coherence at each level, but the factor analyses had not allowed for the direct establishment of explicit commensurability over the three levels. Instead, this process had been influenced by subjective decisions within the project. This meant that in principle two distinctive cases could be taken into account in the interpretation of the actual findings, i.e. commensurability or incommensurability, and neither case could be ruled out on empirical grounds.

In the case of an adequate commensurability being a valid assumption, the conclusion would be that the opinions as to what is important in teaching did in fact vary depending upon how the functions were described. One way of interpreting such a finding could be that while a certain function, like the "social-emotional" in this context, may be regarded as a very important goal to be striven for, the actual situation of teaching is such that other functions nevertheless will have to be considered as more important in the daily activities. Thus, to point to a theoretical concept of some relevance here, a certain "cognitive dissonance" (cf Festinger, 1957) could be taken to prevail between the views on importance in different contexts. However, from the standpoint of a practical concern with teacher training, the dilemma stated above would remain, in that no clear-cut description of the job and the priorities in terms of further training could have been given.

The alternative point of departure involved the assumption of an inadequate degree of commensurability, making for the possibility of an actual consistency in the opinions over the levels of description. The conclusion in this case would be that, for instance, the function considered as most important at one level somehow - although not indicated in the analyses actually conducted - corresponded to what was seen as the most important also at another level. The formulations at the general A level left a wide leeway as to their practical implications, and many of them could in principle have a bearing upon most of the specific situations described at the B(2) level. The functions considered as the most important at this latter level, i.e. "instructional methods" and "pupil problems", mainly involved events in which

the pupils did not adjust their behaviour properly to the teacher's expectations, and in which single pupils departed from established patterns of conformity. If a consonant meaning was given to the general expectations of "social-emotional pupil development", the evaluations at the different levels could be reconciled to a considerable extent.

In this case, the notion of cognitive dissonance could also be used to interpret the findings. This approach would imply that the appearance of possible conflicts between the general goals and the available means to pursue these goals would result in an adjustment of the meaning of the former to the character of the latter. As in the previous case, however, such an interpretation would remain problematical to the project's concern with the planning of teacher education. The meanings imputed in this way to the general statements in policies and curricula did not correspond very well to the common views on concepts like democracy, co-operation, understanding, good spirit, etc in the context of teaching. Whereas concepts such as these are commonly taken to refer to the steering of educational practice towards highly desirable ends, the present interpretation seemed rather to indicate a preoccupation with the mere maintenance of educational order and control. Thus, while theories, which were to be seen as external to the job analytical rationale itself, could be adopted to account for the actual findings, none of these interpretations seemed to provide adequately for the pursuit of an unambiguous, empirically founded description of the teacher's job and the eligible priorities in terms of training needs.

To conclude this short overview of the questionnaire study within the project PIL, we may observe that while the job analytical rationale did provide for the presentation of a host of data on the teacher's job and training, crucial issues remained that required theoretical consideration. That the job analytical logic of inquiry, and its role theoretical basis, may leave much to be desired was particularly evident, in this case, when certain ambiguous and unexpected findings appeared among the data. Specifically, the dilemma concerning the apparent lack of significant relations between the levels of analysis pertaining to general policy and actual teaching, as well as the questions that were raised as to the possible interpretations in this respect, pointed to a certain inability of the analytical rationale to make intelligible the data which were established on its own basis. Granted that the particular study at issue here was not altogether well adapted to the task of drawing firm conclusions on matters of methodological principle, the actual results nevertheless directed attention to the possibility that similar shortcomings may characterize other scientific techniques of this kind. Taking the case of the PIL study as just one example of such situations

in research on teaching in general, in which considerations concerning the nature of the scientific task may raise certain questions as to the adequacy of the methodology in use, we will now proceed to a more systematic discussion of some pertinent aspects of this methodology.

PART II. THE SCIENTIFIC METHODOLOGY OF RESEARCH ON TEACHING

Summary

The major purpose in this part of the study is to provide a more systematic account of the scientific methodology of predominant research on teaching than the one involved in the previous discussion of particular features. Using the concept of methodology in a broad sense to include both the various aspects of the process of scientific inquiry and the study of this process itself, we attempt to point out some distinguishing elements of paradigmatic research and observe how such elements are described in certain well-established texts in the field. Besides considering in this way aspects of the methodology pertaining to aims and functions, theories and methods, etc, the discussion directs attention to certain possibilities of methodological development within the paradigm. Thus, the reconstruction of the methodology takes its point of departure in the internal context of the paradigm itself, and tries to provide a fruitful foundation for subsequent analysis and interpretation.

In chapter 5, the general aims and methods of research on teaching are discussed, primarily on the basis of pertinent statements by distinguished researchers in the field. Serving mainly an introductory purpose, this chapter ends by the common observation that both theoretical and practical concerns are of vital interest to the field. These concerns are then focused upon in chapters 6 and 7 respectively. The theoretical character of predominant research is discussed in terms of a reformulation of what is taken to be a typical conception of some central phenomena in the language of a certain role theory. The distinctive features of this theory are presented with an eye to their meta-theoretical foundation, and it is suggested that it may be used as a typification of the general theoretical orientation of the field. The practical character of research on teaching is then discussed in relation to its theoretical orientation, and an effort is made to typify the paradigmatic meaning of the practicality of such research.

Chapter 8 centers on an attempt to epitomize the general features of the

methodology by means of a few crucial concepts, referring to the nomothetic, technical and normative character of research on teaching. A conclusion is ventured to the effect that these features pertain to a scientific technology concerning the feasibility of establishing generalized knowledge of efficient ways to accomplish educational objectives by means of standardized methods of teaching.

Chapter 9 concerns the problem of reification in the context of the predominant methodology. Discussing a certain controversy pertaining to the "artificial" versus "natural" character of educational phenomena, the analysis considers this problem from different points of view, and with particular emphasis on its sociological implications. The general conclusion is that predominant research seems to involve certain systematic modes of reification in this respect and, in chapters 9.1 and 9.2 respectively, some typical examples are given as to how this may occur within research on teaching methods and the curriculum.

The technological function of research is focused upon in chapter 10 as a major concern within the paradigm. This function, which pertains to the practical application of scientific knowledge, is discussed in terms of the kinds of explanation that are pursued and in relation to the kinds of educational control that may be involved in teaching. It is proposed that predominant research seems to focus on the provision for cognitive control over the processes of learning, while aspects of social control seem to be bracketed or played down through the mechanisms of reification. The chapter ends by a look at the actual accomplishments, according to common views among researchers themselves, and it is concluded that the technological results in fact seem to be meager, especially when considered from the explicit standpoint of practicality.

However, practicality may concern other aspects than the direct technological application of scientific information, and in chapter 11 the possible significance of an interpretive function is taken into account. Referring to the provision of a certain form of understanding central pedagogical phenomena, this function is considered as an integral element of scientific endeavour, and as a sometimes overlooked prerequisite for, or complement to, the technological function. An attempt is made to argue that theory and research within the predominant paradigm require and promote a form of technological understanding of teaching within which the problem of reification may be ascribed a crucial role. Closing this part of the study, the chapter ends by raising the question of why this mode of understanding educational problems seems to permeate the predominant paradigm as an aspect of the scientific form of pedagogical comprehension.

5. The General Aims and Methods of Research on Teaching

This chapter will concern the ways in which the general aims and methods of scientific inquiry are commonly conceptualized within the field of research on teaching. In order to picture some of the predominant themes in these respects, we will take a look at how the overall purposes, and the means of pursuing these, are apprehended by distinguished researchers within the framework of well-known and influential handbooks, textbooks and summary presentations in the area.

In the fourth edition of the Encyclopedia of Educational Research (Ebel, 1969a), one of the articles deals explicitly with the scientific approach to educational research and some basic concepts are defined.

"Science is a misused and misunderstood word. It is not an activity whose purpose it is to amass facts. Nor does it have a primary concern for improving the world and mankind's lot, though it may often help to do this. Its basic aim is to discover or invent general explanations of natural events. In a word, its purpose is theory or explanation. And a theory is 'a set of interrelated constructs (concepts), definitions, and propositions that present a systematic view of phenomena by specifying relations among variables, with the purpose of explaining ... phenomena'" (Kerlinger, 1969, p 1127; references omitted).

This definition of theory is repeated in a textbook on the methodology of educational research by the same author (Kerlinger, 1970), with the addition that the purpose of theory is, besides explanation, also prediction. Scientific research is defined in the following way.

"Scientific research is systematic, controlled, empirical, and critical investigation of hypothetical propositions about the presumed relations among natural phenomena" (Kerlinger, 1970, p 13).

In the voluminous and influential Handbook of Research on Teaching (Gage, 1963a)¹⁾, "research" is defined once, according to the index, but then also by a researcher whose views can be taken to be quite representative of the

1) In the preface to the Second Handbook, the editor (Travers, 1973, p v) states that the First Handbook achieved a "remarkable success".

bulk of research discussed in the volume.¹⁾ This is the definition:

"By research, we mean activity aimed at increasing our power to understand, predict, and control events of a given kind" (Gage, 1963, p 96).

This general aim is then specified in the following manner.

"All three of these goals involve relationships between events or variables. We understand an event by relating it logically to others. We predict an event by relating it empirically to antecedents in time. We control an event by manipulating the independent variables to which it is functionally related (Gage, op cit, p 96).

One chapter of the First Handbook is explicitly concerned with the logic of the scientific method in research on teaching (Brodbeck, 1963). However, the article largely deals with certain general issues, which are taken to be common to all sciences, and among these the principles of concept-formation, the nature of scientific laws and causality, and so on. The specific problems of social science, of which educational research is seen as a part, are seen to concern the use of "group or institutional concepts" and concepts referring to "'unobservable' states of persons", the "so-called 'problem of reduction'", and finally the circumstance that virtually all knowledge in the area is "statistical rather than 'deterministic'" (op cit, p 44).

In the "Second Handbook" (Travers, 1973), neither "science" nor "research" is defined even once, according to the index. In effect, however, the content of this volume seems to deal more with conceptual problems than was the case in the First Handbook, and several chapters focus on theoretical issues. Without going into detail, it seems that the second volume of the Handbook manifests a certain uneasiness with the conceptual state of the field and a general dissatisfaction with its theoretical foundations. As a consequence, there is, as the editor puts it, "considerable emphasis placed on a consideration of how research should be undertaken if it is to be productive" (Travers, 1973, p vii). However, apart from this general uneasiness with "the state of the arts", there does not seem to be any substantial difference between the two volumes of the Handbook in terms of how the general aims and methods of research are conceived. The discussion on "theory" in the second volume seems to indicate this state of diverging suggestions within a common framework.

"There appear to be almost as many definitions of theory as there are people concerned with theory. And, in a real sense, this entire chapter is an elaborated definition of theory. In its simplest form, a theory is a symbolic construction designed to bring generalizable facts (or laws) into systematic connection. It consists of a) a set of units (facts, concepts,

1) Being the editor of the Handbook, Gage (1963a, preface) defined the conceptual framework which was to "provide an orientation for the entire volume".

variables) and b) a system of relationships among the units. These are defined and interpreted in statements that are understandable to others and that make predictions about empirical events" (Snow, 1973, p 78).

Kerlinger (1969, 1970) prefers, as we have seen, to describe the purpose of scientific research as the formulation of theory rather than as "improving the world and mankind's lot", but he also recognizes the vast influence of the "practicality criterion". This basis of evaluating research is seen as having been raised to the "most preeminent place it has ever had in American educational research" (Kerlinger, 1969, p 1128), which may be considered as quite an achievement in light of the research carried out in the early decades of this century. In any event, an important general aim of educational research seems to be to establish knowledge of practical utility. This intent can be formulated in the following way.

"The scientific goal of educational research is to discover laws or generalizations about behavior that can be used to make predictions and control events within educational situations... The goal of educational research workers is to produce a body of knowledge consisting of generalizations about behavior that can be used to predict behavior in educational situations and to plan educational procedures and practices" (Travers, 1969, p 5).

Gage & Unruh (1969) speak of a cleavage in approaches between "describers" and "improvers", referring to the concern with how teaching is as compared with how it ought to be.

"The long-range assumption of describers is that once important correlates of teacher effectiveness in the present-day classroom have been ascertained, it will be possible to train teachers to be more effective ... They take ... a 'passive' approach in that they seek to 'model the master teacher'. The improvers, taking an 'active' approach, attend rather to 'master the teaching model', i.e. to develop a new model of instruction that will make explicit the manipulable elements and relationships needed to optimize learning. Experimentation will correct and refine the model" (Gage & Unruh, 1969, pp 4-5).

The problematical relationship between "theory" and "practicality" is often alluded to in surveys of educational research, and it is mirrored in concepts like empirical versus normative research (cf Hansen, 1967) or descriptive versus prescriptive, "operative" or "productive" research (cf Dunkel, 1972). The distinctions between basic and applied research or between "conclusion-oriented" and "decision-oriented" research (Cronbach & Suppes, 1969) can also be seen in this light.

Gage (1963) describes educational research, including research on teaching, as ranging along a continuum from the most basic to the most applied, and he relates a number of categories of research to exemplify his argument. More often, however, this issue is treated as a matter of a general contrast between the foci of "broad generalizations" and "narrow, practical questions" (e.g. Kerlinger, 1969). This view of the matter is clearly brought out in the following typical definitions, starting with that of basic research:

"We use it to refer to the activity whose immediate aim is the quantitative formulation of verifiable general laws, and whose ultimate aim is establishment of a system of concepts and relations (the so-called nomothetic net) in which all specific propositions are deducible from a few general principles. Basic research seeks eternal verities. Its hallmark is the carefully designed and well controlled experiments whose conclusions are rigorously tested for statistical significance.

Applied research, on the other hand, refers to the collection of data that promise help in the solution of some immediate practical problem. Experience, not experiment, is the source of most applied research data. The problems, the data, the solutions tend to be ephemeral, not eternal" (Ebel, 1969b, pp 15-16).

It would seem as if the distinction between the concepts of basic and applied research relates closely to the concern with the establishment of theory on the one hand and with practicability on the other. It would also seem as if basic research is often defined by its lack of practical usefulness and, as Ebel (1969b, p 16) observes, such "uselessness" may sometimes even appear as an virtue among researchers. Commonly, however, the general understanding of the issue seems consonant with the saying that there is nothing more practical than a good theory.

Useful as the distinction between basic and applied research may be in the description of particular forms of organization and administration of research, it says little about the character of scientific methodology. While, for instance, the method of experimentation is frequently associated with notions of basic research, and survey methods often are seen as indicative of applied research, no firm borderlines can be drawn. At the level of theoretical consideration, basic research may be seen as "explanatory" and applied research as "descriptive", but then again this distinction says little of the use of methods since, for instance, survey research may well be considered explanatory in some of its forms (cf Herriot, 1969).

The content area "Research" in the Encyclopedia of Educational Research (Ebel, 1969a) features separate articles on experimental and survey research methods, statistical methods and "remaining" methods. In the area last mentioned, observational studies, rating studies, sociometric techniques, anecdotal records, longitudinal studies, and action research are covered (Mouly, 1969). As statistical methods are perceived as relevant to most kinds of educational research, it seems that the outline of the Encyclopedia reflects the generally recognized character of the range of methods employed in educational research as largely focusing on the variety of experimental and survey research methods. But, as has already been said, these major types of methods do not relate unequivocally to the "basic" or "applied" aims that are being pursued.

It seems that the issue of "theory" and "practicality" is often seen to boil down to a question of whether an ambition towards "scientific explana-

ion" is at hand or not. When such an ambition is pursued by means of established scientific methods, notably the experiment, the research is generally considered "basic" and, conversely, when this is not the case, e.g. when data is gathered and descriptive information is provided by means of survey studies, the research is often seen as "applied". This convention, however, is obviously not based in any criteria inherent to scientific methodology as such.

More interesting than these discursive conventions between what is seen as "basic" or "applied" is perhaps the issue of how various kinds of research relate to the practical problems of education and teaching. The general methodology of "basic" research, for instance, may provide for a particular kind of possible application. Likewise, the "theory" being pursued may well be compatible with particular notions of "practicality".

Therefore, while some researchers on teaching may prefer to describe their aim, and that of science, as something "purely theoretical", which may or may not have practical implications due to e.g. extra-scientific circumstances, the conception of theory and the methodology in use for its realization may nevertheless imply specific notions of practicality. Kerlinger (1969, 1970), for instance, speaks of the principal aim of research as theory but he also defines this aim in terms of something no less practical than prediction. In effect, the conceptions of theory and basic research that appear in the sources referred to here seem to provide for a possible reconciliation with certain practical concerns. These concerns are aptly described by Travers in the quotation on page 61 or by Ebel (1969b, p 20), when he describes the aim of research as the establishment of a "structure of concepts and causal relations that will permit effective control of the process of education and precise predictions of its results". Thus, the problems of "theory" and "basic research" should certainly not be confused with notions of "abstract speculations" or "practical uselessness", at least not in terms of the intentions expressed by distinguished researchers in the field.

The presentation of prototypical formulations of the general aims and methods of research on teaching given thus far has to be seen primarily in relation to research on teaching methods, in a wide sense, and possible deviations from this pattern within curricular research should therefore be taken into consideration.

If the aims of research on teaching methods can be described in the general terms of theory and practicality, this two-fold purpose is no doubt relevant also to curricular research. However, while the intersections of theory and practical application within research on teaching methods manifest

themselves in a number of variations in terms of conceptual apparatuses, methodical preferences, normative or descriptive inclinations, and so on, the situation appears to be somewhat different within the field of curricular research. It seems that although a variety of approaches may characterize also this field, its development is more clear-cut methodologically, especially within the area of research on the "socialized" curriculum, i.e. a curriculum based on some kind of sociological analysis of social structure, with which we are primarily concerned. The basic scientific ambition of providing for the development of theory thus seems to be remarkably weak within this tradition, and the general concern seems to have been more with improving education than with understanding it, as Johnson (1967) puts it. The late interest within curricular theorizing in trying to explain sociologically the actual character of existing curricula, for example, appears to be almost entirely lacking in the predominant tradition of research, which instead seems to have focused on the practical task of attempting to develop better curricula.

Hence, Kliebard (1970), in discussing the development of the curriculum field, points to its persistent "ameliorative orientation", according to which

"... the urge to do good is so immediate, so direct, and so overwhelming that there has been virtually no toleration of the kind of long range research that has little immediate value to practitioners in the field, but which may in the long run contribute significantly to our basic knowledge and understanding" (Kliebard, 1970, p 33).

The crucial issue of the relations between so-called descriptive and normative research seems to have been approached as unproblematical, although perhaps on the bases of different notions of the scientific task. Thus, the explicit ameliorative stand of much research in the US may be juxtaposed to an alternative position, observed in chapter 3 in relation to Swedish research on curricular matters, involving the explicit claim for a normative neutrality of empirical research, while leaving the ameliorative worries to external agencies. Interestingly enough, however, these different positions on the question of normative practicality seem to have resulted in much the same kind of methodological operations being employed in the actual pursuit of scientific knowledge.

In general, from the perspective of scientific methodology, there seems to be no decisive reason to expand the range of considerations on account of the distinctiveness of curricular research, but we may take notice of the apparent weakness of basic theoretical intents in this field. The major concern seems to have been with the provision of practical information for educational improvement, pursued mainly by means of survey investigations,

and the problem of scientific theory seems to have been largely subordinated to this aim. The sociological theory involved in research on the "socialized" curriculum thus seems to have been looked upon as basically a tool for systematic inquiry, rather than as an end in itself. Although alternative approaches certainly exist within the study of the social construction of curricula, the predominant approach may in this sense be regarded as oriented towards the use of theory as a means of providing for a systematic foundation of decision-making on curricular matters.¹⁾

In conclusion, we will maintain the generalization that research on teaching is directed towards the twofold aim of providing for scientific theory and practical application. Some researchers stress the long range pursuit of scientific theory as an intention beyond the scope of practical concerns, while others seem to regard such theory as primarily a means to the formulation of practical solutions to educational problems. In the following, we will consider the predominant methodology primarily in terms of the intersections of the theoretical and practical concerns, which is to say that we will focus upon the ways in which these concerns may be reconciled within the scope of the methodology at issue. Paying particular attention to what may be seen as the major methods within the paradigm, i.e. the varieties of experimental and survey methods, we will thus discuss some aspects of how research on teaching attempts to provide for "understanding, prediction and control" in the context of teaching and learning.

1) See e.g. Kallós & Lundgren (1976) and Pinar (1975) for some indications of the variety of alternative approaches in this context.

6. The Theoretical Character of Research on Teaching

In the preceding chapter, we concluded that the general aims of research on teaching can be described as the provision for "understanding, prediction and control" of the phenomena under consideration, within the overall concerns with the formulation and practical application of theoretical knowledge. The pursuit of adequate theory is obviously a complex and troublesome endeavour in any field of scientific research - that of teaching being no exception - and any attempt to characterize the theoretical outlook of a tradition of research in a few words is bound to run the risk of overgeneralization and undue simplification. When we undertake such an attempt in the following, therefore, it should be understood that the purpose is merely to identify some characteristic features of theory in research on teaching as these relate to the general line of analysis in this study and that no intent of comprehensiveness, either in terms of scope or detail, is at hand. Alternative approaches to those to be described certainly exist within research on teaching, and the variations are plentiful even within the scope focused upon here. Nevertheless, research on teaching presents itself as dominated by certain theoretical inclinations, which could perhaps be called "meta-theoretical", and we will try to make some of these explicit in view of the subsequent analysis.

As a way of approaching this complex area, we may take a look at how the concept of teaching is defined in what can be regarded as major texts of interest in this context, the two Handbooks of Research on Teaching. In the first of these (Gage, 1963a), teaching is defined once in the entire volume according to the index, but then, as was said before, by an influential writer in the field.

"By teaching, we mean, for the present purpose of defining research on teaching, any interpersonal influence aimed at changing the ways in which other persons can or will behave" (Gage, 1963, p 96).

In the second Handbook (Travers, 1973), teaching is likewise defined once, according to the index. Since no explicit definition of teaching is offered

in the listed place, however, but rather a definition of a teacher, we may assume from the context that teaching is considered to be the activity of the teacher.

"A teacher is a person engaged in interactive behavior with one or more students for the purpose of effecting a change in these students" (McNeil & Popham, 1973, p 219).

The same volume also features an article in which certain "models of teaching" are discussed (Nuthall & Snook, 1973). These models are taken to be distinct approaches to the study of teaching within recent research, and they are seen as general conceptions of how teaching ought to be analyzed and, as such, of how to organize and interpret research. The models are called the "behaviour-control" or "behaviour-modification model", the "discovery-learning model" and the "rational model", and they may be epitomized as follows.

The behaviour-control model consists of conceptions of teaching that are closely related to the framework of behavioural psychology, manifesting an elaborated stimulus-response view of teaching as exemplified in programmed instruction and the techniques of behaviour modification. The discovery-learning model emphasizes the self-directed activity and creativity of the student and makes use of the terminology of cognitive psychology and the psychology of child development. The rational model relates to analytical philosophy and may be seen as the major non-psychological conception of teaching. This model focuses on the rational basis of teaching in terms of logic and justice, emphasizing the distinction between teaching and learning and the nature of language in the establishment of knowledge.

On the basis of this delineation by Nuthall & Snook (op cit) of the various conceptions of teaching that are employed in research, we may state that our present concern is primarily with the first, the behaviour-control model. Conceptions within that model are explicit or implicit in the bulk of research described in Part I, as will be further discussed in later sections of the presentation. The discovery-learning model has its relevance to the present context primarily in its relation to the curricular research concerned with the "structure of the disciplines", which will be touched upon on occasion, but in the present context it is of minor importance. This is also the case with the rational model which has generated little empirical research.

The research on teaching and the teacher described in Part I primarily relates to the issues of the teacher's role, teacher effectiveness and teaching methods. As said before, these issues are often seen as constituting separate sub-fields of research on teaching and they are consequently often treated as such in surveys of research. This is the case in the Encyclopedia

of Educational Research (Ebel, 1969a) in which their main concerns are described as follows.

"Teacher effectiveness is an area of research which is concerned with relationships between the characteristics of teachers, teaching acts, and their effects on the educational outcomes of classroom teaching" (Flanders, 1969, p 1423).

"Teaching methods are patterns of teacher behavior that are recurrent, applicable to various subject matters, characteristic of more than one teacher, and relevant to learning" (Gage, 1969, p 1446).

"The role of the teacher involves two broad fields of research. On the one hand, 'role' refers to behavior; thus, studies of teacher-role performance are these in which the actual behavior of teachers is observed. On the other hand, 'role' refers to expectations of behavior; thus, studies of teacher-role expectations are those in which expectations maintained for teachers by teachers and others are investigated" (Biddle, 1969, p 1437).

And

"... majority interest in teacher role-performance research has appeared to stem from concern with the direct effects of teacher behavior on pupil learning..." (Biddle, op cit, p 1440).

What has been observed so far can perhaps suffice to make some general remarks on how the central phenomena of concern to research on teaching are often conceptualized. Focus is placed upon two categories of persons in the educational setting, teachers and students, pupils or learners. These categories are typically defined on the basis of the institutionalized organization of education and their identification is taken to be unproblematical. The relationships between the two categories are of prime interest in that the activities (or other characteristics) of the teachers are studied in relation to the learning, in a broad sense, on the part of the students.

These features of research are common to all the areas considered, whether called "teacher role analysis", "teacher effectiveness studies" or "teaching methods research". Thus in this sense it seems that the major concern is substantively the same and the differences mainly related to the conceptual preferences of various researchers. Indicative of this state of affairs is, for instance, that reference is frequently made to a common body of research, which is seen as having a relevant bearing upon all the different sub-fields. Of course, the conceptual preferences are mirrored in different techniques, foci of attention, scope and so on, but ultimately the main concern is with the effects of the teachers' teaching on the students' learning.

If we consider the definitions of teaching given earlier, another feature of research on teaching appears, which is only implied in the descriptions above of the concerns of the differently labelled areas of research. The character of teaching is typically defined in terms of the aims and intentions of the teacher, and the interest lies in those aspects of the situa-

tion which are expected to result in specific ends, notably learning. Not all characteristics of teachers or teaching are of concern to research, but specifically those that are somehow seen as related to the normative outcome of teaching. This circumstance also incorporates the specific character of curricular research and the particular concern with educational aims and objectives in that context. These features will be further discussed in chapter 6.2.

On the basis of these observations and considerations, we will venture a first generalization: The strategic conception of teaching within the predominant paradigm of research on teaching is that teaching is that intentional, interactive behaviour of the teacher which is designed to bring about changes in (the behaviour of) the students, due to learning. This definition is not exactly free from ambiguities, but it is sufficiently clear to allow for the identification of the three elements which appear in the typical conception of teaching; teacher intention, teacher-student interaction, and student change. Thus, we have a social context with two categories of actors and a specification of this context in terms of the intentions of the one party and the expected results of the other. The teacher is seen as interacting with the students in ways which correspond to the educational intentions and the expectations of student learning. We could say that teaching is conceptualized as the interactional teacher behaviour, which is congruent with normative expectations of student learning. Or, in other words, teaching is that role behaviour, in the position of the teacher, which is normatively expected in terms of student learning.

With this reformulation of the concept of teaching, the basic elements are framed in the vocabulary of a certain kind of role theory. In the following, we will suggest that this reformulated conception can serve as a summary framework for the typification of basic theoretical points of departure within research on teaching. The character of this role theory, and its specifications in the context under consideration, will be described in some detail shortly, and we will maintain that its use, while obviously disregarding some particular features of specific sub-fields, does not unduely violate either typical conceptions of teaching within the predominant paradigm, or the meanings commonly ascribed to role concepts in role theory. The reasons for applying this role theoretical framework within the present typification are that it is frequently entertained explicitly in research on teaching, as has been indicated in Part I and, more importantly, that its use may simplify the further discussion and bring out some, often merely implied, meta-theoretical and methodological features of research on teaching.

We will consider research on teaching within the two broad areas of cur-

ricular and teaching methods research, primarily concerned with the issues of the ends and means of teaching respectively. We will try to demonstrate that role theoretical conceptions of a certain kind are explicit or implicit within research in both areas and that the character of research on teaching can be understood, in some important respects, through the analysis of these conceptions. In order to carry out such an analysis, however, the character of the role theory in question should first be made clear.

6.1 Sociological and Psychological Aspects of Role Theory

The development of what is commonly called "role theory" has been an undertaking of concern to most social and behavioural sciences, and role-related concepts have been used extensively within the disciplines of anthropology, sociology and psychology in particular. The various approaches have resulted in an elaborate conceptual apparatus, within which the scope and distinctiveness of different alternatives are not easily identified. The terminological conventions are often diffuse and the lack of an agreed language forces writers in the field to constantly repeat their definitions of even basic concepts. However, the general core of the theory seems rather firm and the disagreements and variations seem more terminological than conceptual. Once a few basic distinctions have been made, e.g. between the "sociological" and the "psychological" levels of analysis, most theorists appear to be concerned with essentially the same kind of issues, e.g. the problems of social order, conformity and deviance, socialization and internalization etc, conceptualized within a common meta-theoretical frame of reference. This situation of many diverse leanings within the scope of a common basic framework manifests itself in, among other more important things, the conventional use of the term "role theory" as the label of this framework. Although this designation may be somewhat dubious, it will be used also in this presentation.

Within sociological theory and research dominated by the American tradition, role theory is surely to be seen as the prime candidate for the title of the sociological theory. Both as a constituent of "grand theory", epitomized by Parsonian sociology, and as a tool in "abstracted empiricism", to use the terms coined by C. Wright Mills (1971), role theory has played a crucial part in the establishment of the present character of this tradition.

The influence of role theory on the development of social psychology has likewise been extensive, although the use of the singular form of theory must be more carefully circumscribed in this context by the recognition of substantively diverging tendencies, for example in line with the symbolical interactionism of Cooley (e.g. 1922) or Mead (e.g. 1934). The general importance of role theory to the behavioural sciences is affirmed by two scholars within the field, serving as editors of one of the most comprehensive volumes on role theory and research, in the following way.

"Role concepts are not the lingua franca of the behavioral sciences, but perhaps they presently come closer to this universal language than any other vocabulary of behavioral science" (Biddle & Thomas, 1966, p 8).

To describe the character of this role theory, it is reasonable to start with an account for the concept of role. Obviously of central concern to all the various strands within the general framework, this concept is, however, probably the one which has created the greatest confusion for the student of role theory. The definitions are numerous, the disagreements plentiful and the term seems applicable to a wide variety of phenomena.

"The idea of role has been used to denote prescription, description, evaluation and action; it has referred to covert and overt processes, to the behavior of the self and others, to the behavior an individual initiates versus that which is directed to him" (Biddle & Thomas, 1966, p 29).

This situation can be exemplified to some extent by the variety of what Shaw & Costanzo (1970) consider as some representative definitions of the concept of role:

"the expectations that persons hold in common toward any person who falls in a particular category by virtue of his position in the social system";

'Behavior that is characteristic and expected of a person or persons who occupy a position in the group';

'an internally consistent series of conditioned responses by one member of a social situation which represents the stimuli pattern for a similarly internally consistent series of conditioned responses of the other in that situation';

'a patterned sequence of learned actions or deeds performed by a person in an interaction situation';

'A persons role is a pattern or type of social behavior which seems situationally appropriate to him in terms of the demands and expectations of those in the group'" (Shaw & Costanzo, 1970, p 335; references omitted).

This selection of definitions is of course conditioned also by the fact that it is part of a textbook on social psychology and a great number of alternatives can be found in other sources, particularly in introductory texts in sociology. What the various approaches in question have in common, however, is the basic aim, since

"... like any other scientific endeavor role theory aspires to understand, predict, and control the particular phenomena included in its domain of study"

(Biddle & Thomas, 1966, p 3).

To bring some order into the seemingly disparate array of definitional approaches, it may be helpful to observe initially the distinction between the two analytical dimensions of role-expectations and role-behaviour. Thus, while some role theorists reserve the term "role" for actual behaviour in a social position, others let the term denote the expectations attached to this position. In this latter case, actual behaviour is mostly called "role performance" or "role behaviour" (cf Charters, 1963).

The conceptions of expectations are likewise framed in different terms by different authors (cf Gross, Mason & McEachern, 1958; Secord & Backman, 1964), with the prime intention of establishing an analytical basis of separating out prescriptive or normative expectations from descriptive or anticipatory ones. These kinds of distinctions, and the bases of their relevance, are discussed in detail by Kelvin (1970).

Having observed these distinctions, some typical features of role analysis becomes easily discernible. The social system under consideration is seen as constituted by a number of social positions, standing in specific relations to each other. These relations are defined in terms of the normative expectations, which the occupants of the positions hold with reference to the behaviour or other attributes deemed appropriate in various forms of interaction. The expectations, defining the respective roles, stand in reciprocal relations to each other and by conforming to these, the stability and adequate functioning of the social system may be secured.

To describe the formal properties of the particular system in question, role theorists have used concepts like role set (Merton, 1957, p 369) or positional sectors (Gross et al, 1958, p 51). The variety of expectations have been systematized into the interactional field of reference groups (Merton, op cit, p 233) or counter positions to the focal position (Gross et al, op cit, p 51), and so on.

Hence, the role under investigation is described according to the expectations prevailing in the system. Appropriate conduct in a specific role is seen as reinforced by a system of sanctions, positive and negative, which correspond to the role relationships. These sanctions are seen as maintained in order to guarantee adequate performance in the role system, e.g. in terms of functional imperatives (cf Getzels, 1962), and the stability thus achieved may also be seen as psychologically important, insofar as a certain predictability of the social relationships is at hand. Furthermore, through the processes of socialization and internalization, the social system and the personality structure of the individual are typically seen as closely related in terms of the motivational forces of the individual toward conformity with

expectations and the psychological satisfaction arising from this state (cf Parsons, 1964).

Zetterberg (1965) observes that research and theorizing did for a long time regard the expectations directed towards a particular position as rather homogenous and analytically unproblematical, but that later research has in fact pointed to the common prevalence of definite discrepancies in this respect. Hence, the concept of role conflict has entered role analysis as an important aspect of inquiry. Such conflicts have been accounted for theoretically in different ways but a frequent solution has been to recognize that the expectations upon a specific position may vary with the counter-positions, i.e. intra-role conflict, and that the individual may occupy several positions simultaneously and that conflicting expectations may be attached to these positions, i.e. inter-role conflict (cf Gross et al, 1958; Israel, 1963). A systematic analysis of various forms of role conflict is presented by Asplund (1968).

The psychological implications of role conflict have been studied extensively, and in these cases the concept of role is prototypically employed at a level of analysis at which individual characteristics are approached as functions of the role or roles of the individual. Thus, at this psychological level the concept of role is defined in terms of independent variables, e.g. behavioural expectancies, which may influence the individual in specific ways (cf Kelvin, 1970). Using concepts like role stress and strain, the analysis may observe the conflicts between various normative expectations in the social-psychological system in relation to the individual's perception and resolution of these, often with reference to the character of the prevailing system of sanctioning (cf Gross et al, 1958).

Getzels & Guba (1957) made an attempt to synthesize what has been called the sociological and psychological levels of role analysis in their discussion of the nomothetic and idiographic dimensions of role behaviour. Their analysis, probably "the most influential role theory in education" (Charters, 1963, p 789), thus focuses on the interrelations between the individual and the social system. The nomothetic dimension is seen as constituted by three aspects of increasing generality; role expectations defining the rights and duties of a particular role, which together with other roles form an institution. This dimension is seen as describing the attainment of the functions of the social system. The idiographic dimension also consists of three aspects, describing the individual's strive for satisfaction. Nced-disposition concern the tendencies to act in certain ways and together they constitute the individual's personality, which in its turn define the characteristic adaptation of the individual to the environment. Using these kinds of

conceptions, the analysis is carried through with regards to, for instance, the respective goal attainments of the individual and the social system. Some of the difficulties involved in this model are discussed by Charters (1963).

The question of the functional requirements of the social system is central to role theory. The concepts of role and function are often used in close connection to each other, and the roles may thus be said to

"... refer to the functions a person performs when occupying a particular characterization (position) within a particular social context" (Shaw & Costanzo, 1970, p 326).

Alternatively, the concepts may be integrated by way of maintaining that

"... a position is an aspect of the structure of the group; its role denotes the function of that position" (Kelvin, 1971, p 142).

The concept of function has, like many others in the field, been used quite loosely and sometimes it refers to descriptive states, sometimes to prescriptive states of the social or the individual system. The best known definition of the concept of function is most likely the following.

"Functions are those observed consequences which make for the adaptation or adjustment of a given system; and dysfunctions those observed consequences which lessen the adaptation or adjustment of the system. There is also the empirical possibility of nonfunctional consequences, which are simply irrelevant to the system under consideration... Manifest functions are those objective consequences contributing to the adjustment or adaptation of the system which are intended and recognized by participants in the system; Latent functions, correlatively, being those which are neither intended nor recognized" (Merton, 1957, p 51).

To epitomize the role-theoretical conceptions that are of most interest to the present context, we may observe their "structural-functional" character. Whether conceived of at the sociological level or the psychological level, interest is focused upon the functional relationships between structural entities, i.e. between roles (or positions) in the framework of social institutions or between individuals' behaviour in the framework of interconnected roles (or positions). Social structure is conceptualized as a pattern of roles (or positions), functionally related to each other within a broader social context, and individuals are seen as acting within these roles (or positions) in order to carry out the particular functions in ways which are congenial to their personality structures. At the sociological level, aggregates of individuals are studied in their structural interaction, while the single individual's relation to his or her role is the prime target of analysis at the psychological level. Here, the systems of expectations and sanctions are apprehended in their operant capacity of directing the individual within a conceptual framework which largely corresponds to the behavioural psychology of learning, e.g. in terms of stimuli patterns and reinforcement. Thus, role theory, as described here, may be considered as a

mediating link between structural-functional sociology and behavioural psychology. This issue will be further discussed later (e.g. chapter 6.2).

With the purpose of providing a less fragmentary account for the character of role theory than can be given on the basis of a description of some alternative approaches of the kind presented so far, we will in the following take a more coherent look at its general features as presented in a succinct treatise by the German sociologist Ralf Dahrendorf. His essay on "homo sociologicus" was published in Germany in 1959 and appeared in translation 1968 in the US and 1971 in Sweden. Since this essay was intended to meet "the urgent need of introduction" (1971, p 5) of Anglo-American role theory to a German audience, it nicely epitomizes the crucial features of this theory in a way which is also well adjusted to our present purpose.

The subject of Dahrendorf's treatise is the feasibility of using the social role as an elementary category of social scientific analysis and of constructing a "homo sociologicus" much in the same vein as exemplified by the constructs of "homo oeconomicus" and "psychological man" within other disciplines. Defining the subject matter of sociology as the structure of social roles, Dahrendorf points out that the reduction of man to homo sociologicus is a scientific construction in order to provide for "strong" theory in terms of explanation and prediction. However, like the atom within physics, such constructs are no mere inventions to be used operationally, but once invented they may appear as self-evident to "scientists bent on understanding nature, or man in society" (1968, p 26).

Homo sociologicus stands at the point where the individual and society intersect. He is "man as the bearer of socially predetermined roles" (op cit, p 24). To the sociologist, Dahrendorf argues, the individual is his social roles, but these roles also represent the vexatious fact of society. Hence, the elementary category of the social role basically serves to mediate between the individual and society, and as such between psychology and sociology.

Having outlined a history of the notion of the social role, Dahrendorf introduces the reader to a Herr Doktor Hans Schmidt. This German gentleman has a number of obvious attributes, being a married man of 35, a school teacher with a certain education and religious faith, and so on. These attributes refer to points in a coordinate system of social relations and to the positions occupied by Herr Schmidt in this system.

"Positions may in principle be thought of independently of their incumbents. Just as the mayor's office and the professor's chair do not cease to exist when they become vacant, the positions of Herr Schmidt do not depend on his personality or even his existence" (op cit, p 34).

With every position the individual assumes, society hands him a role to

play. While positions merely refer to places in the field of reference, the roles attached to the positions represent the demands and expectations, which the position-holder is supposed to fulfill. Thus, a first definition of the concept of role can be given:

"Social roles, then, are bundles of expectations directed at the incumbents of positions in a given society" (op cit, p 36).

Roles are, like positions, conceivable without reference to any particular persons, and to the institutionalized segments of any position there correspond specific "role segments". Observing the variety of possible statements on the behaviour of a person in a given situation, Dahrendorf points out that only statements which refer to socially expected behaviour are relevant to sociology, since its concern is "invariably with the individual as confronted with demands generated outside himself, or with society as it confronts the individual with such demands" (op cit, p 37). The definition of the concept of social role is then specified:

"Three features characterize the category of social role as an element of sociological analysis. (1) Like positions, social roles are quasi-objective complexes of prescriptions for behavior which are in principle independent of the individual. (2) Their particular content is defined and redefined not by the individual, but by society. (3) The behavior expectations associated with roles are binding on the individual, in the sense that he cannot ignore or reject them without harm to himself" (op cit, p 37).

These three characteristics of the category of social role are seen by Dahrendorf to relate closely to three basic questions which must be answered in order to demonstrate the analytical value of homo sociologicus:

"(1) How in detail does the encounter of individual and society occur? How do predetermined roles become a part of people's social behavior? What is the relation between homo sociologicus and psychological man? (2) Who or what is this 'society' that serves as the defining agency of social roles? Can the process of defining and redefining social roles be rendered so precise that such irritating personifications can be dispensed with? (3) How is the force of role expectations made binding? What mechanisms or institutions prevent the individual from simply dismissing the behavior prescriptions that he encounters as irrelevant and arbitrary?" (op cit, p 38).

The analysis of the mediation of individual and society gains its sociological impetus from the fact that the individual's relation to a certain role is not a matter of accident or free decision but of necessity and constraint. Thus, society, in this view, is not only a fact but a vexatious fact in that the social roles have a certain compelling force, whether the individual experiences them as such or as something which brings support and security. The constraint of the roles is manifest in the availability of sanctions, i.e. "measures by which society can enforce conformity with its prescriptions" (op cit, p 38). These sanctions, which may be both negative and positive, thus function to maintain adequate role behaviour and although they may change with role expectations, they are "ubiquitous and inescapable"

(op cit, p 39).

Dahrendorf discusses the tendency among role theorists to confine the analysis to the abstract level of "society", using expressions like "social norms", "role expectations defined by society", "sanctions imposed by society" and so on, and he asks for specification of the meaning of "society" in expressions like these. Does it mean all people in a given society? Or is it perhaps the parliament or government in a given society that specifies role expectations and sanctions? Solutions like these are found to be unsatisfactory because the effort to relate the singular noun "society" to a single agency or collectivity tends to ignore the possibility that a multitude of forces of similar character but diverse origins might be involved. Instead, Dahrendorf finds the analytical tool in this respect in an extension of the concept of reference group, as introduced by Merton (1957). With a redefinition of this social-psychological concept in terms of the socially necessary relations between social positions it is seen as adequate to sociological inquiry and interpretation (op cit, p 46).

The question of the nature of "society" then turns into the consequent question of how reference groups formulate and sanction the expectations of the positions they define. Dahrendorf approaches this issue through a critical analysis of the well-known study by Gross et al (1958), in which the role of school superintendent is investigated by means of interviews. Dahrendorf affirms the importance of this effort to replace the general notion of "society" by more precise and operationally useful categories, but he also argues that this particular mode of operation is a mistake. The concept of social role cannot, he argues, be adequately approached on the basis of majority opinions in questionnaires but through an analysis of the compelling force of institutionalization. Roles are not to be seen as modes of behaviour, the desirability of which is more or less agreed upon within reference groups, but as institutional modes of behaviour which are binding for the individual regardless of the role incumbent's or anybody else's opinion.

"Generally speaking, it is possible to identify in any human group those rules and sanctions by which it influences the behavior of its members and of those non-members with whom it establishes relations. These rules and sanctions, which can in principle be separated from the opinions of both members and non-members, are the origin of role expectations and of their binding character" (op cit, p 49).

Another issue to which Dahrendorf attends is the question of how the individual acquires certain positions and roles and how the individual relates to these. This issue concerns the problem of the "paradoxical relationship between the human being of our experience and role-playing homo sociologicus" (op cit, p 53), and thus the transformation of the person into

an actor in the social system. Recognizing the distinction between ascribed and achieved positions, Dahrendorf contends that every position carries with it a social role which demand some contribution from the individual. Before role-playing homo sociologicus can enter the social stage, however, the individual must learn to play the roles, and it is in this context that the important mechanism of socialization by the internalization of behaviour patterns has its place in role analysis.

"The two concepts generally used to describe the process of mediation between the totally unsocial individual and a completely individuated society - socialization and internalization - clearly belong to the intersection between the individual and society; and the category of role accordingly falls on the borderline of sociology and psychology. From the point of view of society and sociology, it is by learning role expectations, by being transformed into homo sociologicus, that man becomes a part of society and accessible to sociological analysis" (op cit, p 56).

Thus, from the standpoint of sociology, society is to be seen as an agency of socialization of the individual into the forms of conduct which are expected from the incumbents of the various positions. Parents, friends, teachers, priests, superiors, etc are to be seen as agents of preparation for the effective and economical performance of the roles society has set for the individual's "social tabula rasa". As Dahrendorf puts it, "only Robinson Crusoe can hope to prevent his alienated rebirth as homo sociologicus" (op cit, p 57).

From the point of view of the individual and psychology, however, these mechanisms have another character. By learning to play the socially defined roles, the individual not only reacts to the vexatious facts of society, but internalizes them and makes them part of his personality. The internalization of role expectations and sanctions is therefore to be seen as one of the significant formative processes of human life. Thus, at least for some roles, the compelling force of society is sustained by the individual's own internal sanctioning, on the basis of the formation of the personality structure.

Having observed the complementary character of the processes of socialization and internalization, Dahrendorf voices concern with that aspect of homo sociologicus which implies a society in which all human behaviour is calculable, predictable and subject to permanent control. He contends, however, that after all social roles of the individual have been taken into account, there remains a residual range of choice which has at least three components.

"There is not only the freedom that every role leaves its players by not pronouncing on certain matters (for example, father Schmidt's free choice of playing ball or playing electric trains), but also a freedom within role expectations arising from the fact that they are largely defined by exclu-

sion rather than determined positively. Few role expectations are all-encompassing prescriptions; most take the form of a range of permitted deviations. Expectations associated with negative sanctions, in particular, are essentially privative; we are not supposed to do certain things, but are otherwise free to do as we please. Finally, the individual's alienated relationship to society implies that he both is and is not society; if society shapes his personality, he can help shape society. Role expectations and sanctions are not unalterably fixed for all time; like everything social they can be changed by changes in people's behaviour and opinions" (op cit, p 58).

Most importantly, however, Dahrendorf argues that the scientific construct of homo sociologicus, although it entails certain moral and philosophical problems, is first and foremost a matter of making the fact of society accessible to propositions based on systematic observation. In a postscript to the essay, he elaborates upon the problematical relationship between sociology and human nature, and he contends that the sociologist should make it clear that human nature is not accurately described by the principle of role conformity. Instead, there may be a certain contradiction between the theoretically fruitful construct of homo sociologicus and the sociologist's, primarily privative, conception of human nature. However, in terms of research methodology, these "philosophical" considerations remain rather diffuse, and they are apparently seen as subordinated to the pursuit of the "scientific" aims. These are described in the following way.

"First of all, and above all else, homo sociologicus is a tool for rationalizing and explaining certain aspects of the world we live in" (op cit, p 67).

Or, according to the German source on which the author's English translation is based:

"Homo sociologicus is first and foremost a means to the end of rationalization, explanation and control of a part of the world in which we live" (Dahrendorf, 1959, p 47; orig. in German).

6.2 Role Theory in Research on Teaching

Teaching is an activity which takes place within the structured context of a social organization of mutually dependent roles. Each role is functionally related to the others, with varying degrees of significance, and a complex web of normative expectations and social sanctions, positive and negative, serve to regulate the activities and to maintain the efficient functioning

of the system. The teacher's role is functionally related to the institution of the school, which, in its turn, is functionally related to the wider society. In order to meet the functional requirements of the institution, the teacher's role, like others in the system, will have to take on a specific character, definable in terms of optimal efficiency and effectiveness of the institutional organization. The teacher's role specifies the functions to be carried out by the teacher through the normative expectations of adequate performance. By means of formal and informal sources of influence, the teacher learns how to perform the role for optimal internal and external satisfaction of personal and social needs. Efficient performance of the teacher's role contributes to the effectiveness of the institution in its pursuit of the functions it has been assigned in society.

This compressed version of role theory may provide a generalized account of how the teacher's role is often apprehended in research on teaching, and it may be used as a framework for the interpretation of all kinds of specialized concerns. Thus, this typification in terms of role theory may fruitfully be applied, we would suggest, not only to the field of research conventionally referred to as explicitly concerned with the roles of the teacher, but also to the other areas that we have included in the present scope, i.e. research on teacher effectiveness and teaching methods as well as research on the "socialized" curriculum.

We have observed that the typical conception of teaching within the predominant paradigm contains three primary aspects; teacher intention, teacher-student relationships, and student change (see p 69). In other words, teaching is apprehended as interactive behaviour in line with specific expectations of teaching outcome, e.g. in terms of learning. Or in still other words, teacher role performance is that pattern of behaviour, which is appropriate relative to normative expectations in terms of educational intentions.

By means of this translation into role theoretical vocabulary, it seems possible to identify some major theoretical concerns of research on teaching in a simple and coherent manner. Following the distinction made before between the two broad fields of teaching methods research and curricular research, we would propose that the former can be understood as generally concerned with teacher role performance while the latter focuses on normative teacher role expectations, as these concepts are specifically defined in the terminology of the various approaches. Thus, teaching methods research can be seen as the scientific study of the antecedents, consequents and concurrents of teacher role performance, while curricular research primarily concerns the problem of defining adequate normative teacher role expectations,

i.e. educational ends to be pursued in and by teaching. In these designations, we include research in those areas pertaining to "teacher effectiveness", "teaching methods" and "teacher role-performance" (cf chapter 2) in the general area of teaching methods research. The specific field within "teacher role research" focusing on role expectations may be seen as a particular case of "curricular" research, insofar as this kind of research, although it centers around the issue of the general expectations in the social environment of teaching, typically concentrates upon the functions which the teacher is supposed to carry out.

Turning first to the field of research on the "socialized" curriculum, the decisive infusion of structural-functional role theory into this tradition is easily discernible, even at instances when no explicit role vocabulary is being employed. In the early efforts by educationalists within the "scientific movement", preliminary steps were taken for the development of an educational role theory along with the general emergence of this kind of theorizing in other fields. The structuring of human activity into discreet aspects on the basis of predominant views on functional ends, and the notion of science as a means of systematizing and refining these views in their relation to objectified criteria of functional requirements, are inherent to a form of sociological analysis which since seem to have penetrated this tradition of research. Coupled with the notion of education as a means of satisfying positively established social functions, a rationale of scientific educational planning was arrived at, the basic features of which are still largely intact in the variety of job analytical techniques. The relationships between structural-functional role theory and the curricular research under consideration should thus be rather obvious from a juxtaposition of the presentations in the previous chapter and those in Part I.

Gage (1963) makes a distinction between two kinds of theories of teaching; those which undertake to explain teacher behaviour as a dependent variable, and those which attempt to explain student behaviour or learning on the basis of teaching as an independent variable. Later (Gage, 1972), a similar conception is used to characterize research on teaching as constituted by the two areas of research on teacher education, in which teacher characteristics are seen as dependent variables, and research on teacher effects, in which teacher characteristics are regarded as independent variables in relation to educational outcome.

This model can be used to illuminate some general aspects of how role theory relates to research on teaching. Thus, role performance can be seen as either a dependent or independent variable. In the former case, role expectations constitute independent variables, in the latter case measures

of educational outcome function as dependent variables. As was observed in chapter 2, however, little research seems to have been carried out in the former area, while a massive effort has been made within the latter.

Correspondingly, when we regard curriculum research as research on teacher role expectations, we may observe that these have typically been approached as dependent variables in relation to various notions of social structure, while little seems to be known, on the basis of this research, about the actual effects of different curricular expectations as independent variables in relation to actual role performance.

Hence, in relation to the distinction between the two "levels" of role analysis observed earlier, i.e. the sociological and the psychological, we may conclude that sociological role analysis has been employed primarily for the formulation of normative teacher role expectations, while psychological role analysis has rather focused on the roles of the students, e.g. in terms of learning, than on the role of the teacher in terms of the actual consequences of normative expectations, e.g. curricular objectives, on teacher role performance. Thus, for instance, the "behavioural objectives movement" seems to take the teacher's role largely for granted on the basis of the tasks emerging from behavioural theories of student behaviour control (cf Nuthall & Snook, 1973).

This interesting feature of research on teaching, i.e. that the role of the students is focused rather than that of the teacher, no doubt mirrors the fact that the functions of the school are typically apprehended in terms of student learning, while the teacher's role is often seen as a mere, although important, means of meeting these functions. The teacher's role becomes a matter of stating explicitly what the students are expected to do, of arranging the stimuli to which the students are supposed to respond, of channeling student responses in well-defined ways by means of conditioned reinforcement, of evaluating student responses objectively etc, in a word, of arranging the situation which will expedite learning (Skinner, 1968). In a sense, therefore, the teacher's role becomes subordinate to that of the students, insofar as the steering and control exercised by the teacher are seen as processes which are largely predetermined by the behavioural theory of learning. Within this form of "radical professionalization" of the teacher's role, we may observe the possibility of an extreme specification of the general conceptions of role theory, i.e. the re-definition of normative expectations as behavioural objectives, role performance as initial and terminal behaviour, social sanctions as reinforcement, role conformity as learning and so on. However, the characteristic features of role theory with which we are concerned remain.

Wallen & Travers (1963), in their review of research on teaching methods in the first Handbook, recognize the close affinity between the various terms used in research on teaching to refer to the central conception of teaching.

"In education, a teacher role is simply a pattern of behavior shared by a group of teachers which is identifiable and generally believed to be related in some way to the learning process. The concept of a teacher role is also related to that of a teaching method. Indeed, the two concepts are often used interchangeably. Again, both role and method are patterns of behavior believed to be related in some way to be learning process. There is little likelihood that an educator would write about a teaching role which was not believed to be related to the learning process. In most educational writings the use of the two terms is indistinguishable, though in recent years the term role has probably had more frequent usage than the term method" (Wallen & Travers, 1963, p 449).

The use of the term "role" is believed by Wallen & Travers (op cit) to lead only to confusion in the discussion of teacher behaviour because it is taken to be generally concerned with a meaning that differ from what is common in social psychology. For this reason and because the definition of role requires the inclusion of a self-other concept at levels with which most writers cannot be concerned, they choose to abandon the term in favour of the more neutral "pattern of behaviour".

Here, however, these arguments, among others, are seen as reasons for the use of the term. Although the term "role" has probably not provided any improvement of the general terminological and conceptual confusion of the field, this is hardly due to the term as such, and the fact that it does point at the definition of teaching as a social relationship is seen as only helpful to the analysis. The confusion in question is here seen as due more to the use of terms that tend to conceal the social character of teaching, e.g. "behavioural pattern" or "method". The concept of role thus implies, also in the case of the analysis of role performance, a social context in which normative considerations, in one form or the other, cannot be disregarded. Hence, a "method" or "behavioural pattern" has its relevance in research on teaching always in relation to intended and actual educational outcome, as is evident from the typical conceptions described.

To be sure, the use of the role concept in research on teaching methods is normally confined to a specific context. With the concern with educational outcome, it follows that the common sociological or social-psychological interpretations have to be specified. Thus, while the role concept generally refers to a certain social milieu, characterized by all the "natural" features of such a context, the researcher on teaching methods is particularly interested in specific forms of social interaction, functionally related to the accomplishment of certain ends in view. Therefore, when we

typify research on teaching methods as research on teacher role performance, we will have to recognize the specific concerns with those forms of teacher activity which are seen as more directly related to the teacher as a skilled professional, and to teaching as a rational-purposeful or even "scientific" endeavour.

In connection to this distinction between the "social" and the "professional" roles of the teacher, we may observe again the close relations between structural-functional role theory and behavioural theories of learning. A general hypothesis of role theory is that of role conformity, i.e. that people behave according to social norms, and the hypothetical construct of role has often proven itself to have the capacity of fruitfully explaining and predicting social behaviour on this basis. Frequently, however, the hypothesis of role conformity is merely taken for granted and this is no doubt the case in much research on the teacher's role. The significance of behavioural psychology, in this context, is that the hypothesis is explicitly raised as an issue of empirical analysis with the aim of ascertaining its actual implications in specific situations of teaching and learning. And while, as we have observed, the focus so far seems to have been on the roles of the students, the promise of behavioural research on teaching can be stated also as the establishment of scientific information as to which normative expectations and sanctions may, under specific conditions, actually function as operant reinforcement of teacher behaviour.

To summarize the account given of the general theoretical character of research on teaching within the predominant paradigm, we suggest that it may be fruitfully understood as explicitly or implicitly based in the distinguishing features of structural-functional sociology and behavioural psychology. The character and implications of these features will be discussed in specific respects throughout the remainder of the study, and so far we have just tried to point out the prevalence of those general meta-theoretical elements within the field.

A certain kind of role theory has been described in order to typify the theoretical orientation of predominant research in this context. Admittedly, this typification may be considered more adequate with regard to research on the "socialized" curriculum, while it does not do full justice to the variety of behavioural theories within teaching methods research. However, we will maintain that it does allow for the identification of certain crucial features also within the various sub-fields of such research, and in later sections we will have the opportunity to discuss these features in more detail.

7. The Practical Character of Research on Teaching

A few years back, a distinguished educationalist found reason to devote himself, in his presidential address to the American Educational Research Association, to the justification of the place of theory in research on educational problems (Suppes, 1974). This fact would seem to point to a situation in which the basic role of theory in research is not fully acknowledged and thus is in need of promotion. A "golden age of empiricism" during the early decades of this century was described as succeeded by educational theorizing of too limited a scope, and Suppes tried to make the case for a wider relevance of theory in the field. This definition of the traditional situation, however, is obviously conditioned also by the meaning imputed to "theory" in the specific context, as Suppes was well aware in, for example, affirming the sophisticated character of the theory of statistical design of experiments developed and used within educational research.

In the previous chapter, we suggested that structural-functional and behavioural modes of theorizing seem to permeate the tradition of research on teaching. Far from being "a-theoretical", the empirical research at issue may thus be seen to involve decisive theoretical stands, although these stands may be only implicit or inadequate in relation to specific purposes. In any event, we would want to recognize in this study the particular theoretical character of even the "rawest" forms of empiricism.

However, there can be no doubt of the fact that research on education in large measure has spent its energies on empirical investigations in which the "practicality criterion" (Kerlinger, 1969, p 1128) has been given a pre-eminent place. Within the two broad areas of curricular and teaching methods research, the "applied" character of many of the endeavours is apparent, e.g. from the persistent search for the definition of "good" teaching and the general ameliorative orientation of the curriculum field. Although some researchers may insist on the label "basic" for their research, the practical interests involved in research on teaching seem to be generally acknowledged.

We would thus suggest that in order to appreciate the theoretical character of the field, also in those cases when this character is only implied by a certain methodology in use, we will have to consider also the specific meaning of the predominant practicality criterion.

The purpose of this chapter is to reconstruct this meaning in a way that may be seen as typical of research within the predominant paradigm and that will later be used in a discussion of the methodological intersections of the theoretical and practical concerns. In the words of the old saying, there is nothing more practical than a good theory, and in the following we will consider in which sense theory of teaching may be practical.

The aims of research on teaching, as described in chapter 5 and in relation to the role theoretical model in chapter 6, can be stated as the provision for "understanding, prediction and control" of the central phenomena in question. These common scientific aims can be interpreted in a particular way in order to stress the interest in the practical application of scientific information. Thus it seems that a focus on prediction and control may be of crucial importance in this respect, as observed in the following quotation.

"It can be said that scientists do not really have to be concerned with explanation and understanding. Only prediction and control are necessary. Proponents of this point of view would say that the adequacy of a theory is its predictive power. If by using the theory we are able to predict successfully, then the theory is confirmed and this is enough. We need not necessarily look for further underlying explanations. Since we can predict reliably, we can control because control is deducible from prediction" (Kerlinger, 1970, p 12).

As discussed earlier (chapter 2), a main issue in research on teaching concerns the study of how educational objectives may be efficiently pursued in and by teaching. The practice of teaching may be seen as a situation in which the teacher makes use of his or her professional capacities in order to bring about the desired effects on the part of the students. In this situation, the teacher may benefit from such information that facilitates the prediction of specific courses of events, and which makes it possible to control such events on the basis of intentions. To carry out the task of teaching effectively, the teacher will have to steer the activities in the classroom and try to keep the intended outcome under control. On grounds of such deliberations, the teacher may thus be thought of as being able to profit from the application of scientific information.

Likewise, such information may be seen to have a potential capacity to contribute to adequate policy-making on all kinds of educational affairs, e.g. in what concerns syllabi, organization, staffing, etc, and the predictive power of scientific information may be seen as crucially related to

the possibilities of successfully controlling the processes of policy implementation. These kinds of notions of the practical efforts made feasible by research on teaching are very frequent in the literature,¹⁾ and they will be used here in order to formulate a typical conception of practicality in this context.

To illuminate the relationship between theory and practicality within the predominant paradigm, we will focus on the concepts of steering and control. Defining educational control, in this general context, as the mechanisms by which educational processes take on a specific character and result in certain ends, and educational steering as the phenomena that aim at such control, we thus direct attention to the regulated order of educational processes and the various sources of influence that may characterize the educational setting.

Focusing as we do on curricular and teaching methods research, we may identify the curriculum and the teacher as two general agencies of educational steering and control, and we will consider the potential or actual intervention by scientific information into the practice of teaching through the intermediaries of these agencies. The teacher, as the "director" of the classroom activities, is of course typically seen as the ultimate agent of steering and control in the context of research on teaching, but this designation may be somewhat dubious on account of the character of the scientific methodology in use, as we will discuss later (e.g. chapter 8).

If we accept, for the sake of exemplifying what may be taken as a typical view, the definition of research on teaching offered by Gage (e.g. 1963, 1972) as concerned with the characteristics of teachers as either dependent or independent variables, we may localize a raison d'être of such research in its capacity to contribute to the planning and implementation of specific ways of teaching and teacher education. Applying the present terminology to this view, we could regard research on teacher education as research on the relations of the steering of the independent variables of such education to the dependent variables of the control exercised on teacher characteristics, while research on teacher effects could be seen as research on the relationships between the steering carried out by the teacher (in terms of behaviour, attributes, etc) and the control of student learning (in terms of knowledge, skills, attitudes, etc).

In general, we would suggest that the practical modus operandi of research on teaching lies in its concern with the relationships between educational steering and control; between the steering force of different teach-

1) For one example, see the quotation from Travers (1969) on p 61.

ing methods and the control of outcome, between curricular steering and the control of intended outcome, and so on. In effect, it seems proper to describe the general orientation of research on teaching as basically concerned with the relationships between educational steering, in terms of curricular objectives, teaching methods etc, and eventual control, primarily in terms of individual learning.

Thus, the focus within research on issues pertaining to prediction and control may be seen to derive its significance from the effort to specify rules of action on the basis of scientific knowledge.¹⁾ An adequate course of action, e.g. in decision-making by teachers or others engaged in the steering of educational practice, may be facilitated by the availability of effective means of prediction and control. From the standpoint of the scientific paradigm, this implies having the knowledge of how one event is causally or functionally related to another, or of how a certain "independent variable", by definition open to control, is so related to a "dependent variable".

As methodological features within a particular logic of inquiry, the pertinent aspects of steering and control may be discussed in several internal contexts of the knowledge obtained, e.g. as to ontological and epistemological stipulations or in terms of validity and reliability, and so on. This discussion may be carried out without any explicit considerations on practicality or on the possibilities of transforming theoretical propositions into rules of action. For instance, experimental designs and the manipulation of variables as a matter of establishing control may be discussed without reference to the feasibility of steering and control in the external context of educational practice.

When the issue of practicality is actually raised, however, the methodological problems take on an extended significance in that they will have to be considered in the context of the application of theory to practice. The actual and potential steering and control of practice on the basis of theoretical knowledge will then have to be discussed in functional relation to the ways in which steering and control are apprehended within the reconstructed confinement of the scientific methodology itself. As a problem of practicality, therefore, it thus seems that the relationship between scientific theory and practical application may be seen as a matter of mutual accommodation within a common problem-situation.

To illuminate the theoretical concerns with the issue of practicality,

1) The issue of the relationship between scientific knowledge and rules of action is further discussed in chapter 11.

we may consider the features of role theory, as described in chapter 6, in relation to the aims of prediction and control. At a general level, society may be apprehended as basically a normative order, in which stability and effective functioning, both sociologically and psychologically, may be conceived of in terms of mutual dependence, consensus, communicative understanding etc, providing for a certain degree of foresight and anticipative regularity. In this sense, the participants in the social system may be able to foresee the "normal" course of events to a considerable extent. The role theory, however, aims at prediction in the paradigmatic meaning of the causal or probabilistic connection between variables in terms of objectified structures, which in methodological principle may be unaffected by the subjective understanding of individual actors in any particular empirical situation. Hence, such scientific theory may provide for an "extension" of certain practical modes of foresight and steering through the attempt to ascertain the lawfulness of the phenomena at issue. This feature of scientific theory and methodology will concern us later on in the analysis (e.g. chapter 16).

In sum, we suggest that the practicality of research on teaching is typically apprehended within the paradigm as a matter of the ways in which scientific theory may contribute to the steering and control of educational practice. The more specific meanings of this typification will be discussed in chapters 10 and 11. The argument that the particular character of the relationship between theory and practicality within the paradigm concerns the features of its scientific methodology will be developed in the next chapter.

8. The General Features of the Scientific Methodology

We have described how role theory, in its relation to structural-functional sociology and behavioural psychology, can be used to typify the predominant character of theory in research on teaching. We have also described a typical view on educational steering and control to deal with the problems of applying theory and research to educational practice. In this chapter, we will inquire into the character of the methodology in use in research on teaching as it relates to the theoretical and practical concerns. This is to say that we will reconstruct some basic features of the scientific methodology in order to further elaborate on the theoretical and practical character of research within the predominant paradigm.

An easily recognized feature of the methodology is what is commonly called its nomothetic character. Focus is on the universal, general or highly probable, rather than on the particular, the specific or the idiographic. We have seen, in chapter 5, how the aims of research are described in terms of theory, laws, generalizations and so on, and the scientific methods and findings are typically scrutinized as to their validity and reliability in this respect. The hypothetico-deductive method often serves as an ideal conception of the nomothetic interest and the problems of inductive generalization are frequently observed in this context. The nomothetic character of educational research is no doubt commonly taken for granted as is evident from, for instance, the way in which this feature is treated in the article on the scientific method in the Encyclopedia of Educational Research (Ebel, 1969a):

"It may clarify the scientist's purpose if we examine, briefly, the so-called nomothetic nature of science. Nomothetic means 'law-making'. A nomothetic science is one that seeks to establish laws or generalizations...

Scientific research is and has to be nomothetic. By its very nature it cannot be concerned with the individual or with the applications of its nomothetic laws and propositions to individuals...

Very bluntly put, there is no such thing as scientific research that is idiographic by definition. And most educational research is and has to be scientific because we want the behavioral laws discovered to be applicable,

ideally, to whole classes or sets of individuals and settings" (Kerlinger, 1969, pp 1127-1128).

Of course, not all educationalists would subscribe to this "blunt" characterization of science, but the general notion is certainly substantiated, at least implicitly, in the thrust of research on teaching that aspires for a scientific status. At any rate, it is quite clear that a nomothetic concern characterizes the kind of research in which we are presently interested, i.e. research within the predominant paradigm.

There is no need to linger on this feature of research, but we may just observe that it manifests itself in behavioural theories of learning, as well as in the role theory (sociological and psychological) described in chapter 6. As to the concern with the practicality of theory and research, we may notice that while the nomothetic feature may be well adapted to general or centralized interests of steering and control, it may create some problems for the particular or local practitioner, e.g. the teacher, a fact to which the often voiced concern with the lack of applicability of scientific knowledge in actual teaching can bear witness (cf Dunkel, 1972).

Another feature of the methodology that we would like to focus upon is its technical character. Research on teaching is primarily concerned with the causal and functional relationships between educational phenomena as these manifest themselves as viable means to certain ends in view. Objectified or objectifiable processes are studied, and explanation and prediction are approached as contributions to the feasibility of control over such processes. The leading interest of knowledge is technical in so far as information is to be established which pertains to the possible attainment of goals and the means of action, the success of which may be controlled on the basis of the ends in view. The ideals of the technical interest may be seen as constituted by the certainty, finality and unity of the knowledge established on this basis (see Radnitzky, 1970:1, p 57).¹⁾

The method of experimentation, as the hallmark of the methodology in question, centers on the nomothetic as well as the technical features of the phenomena in as much as the relative effects of certain operations, everything else in principle being equal, are brought out and the conditions of successful application of information concerning prediction and control are specified. Better adaptation to the environment, or more efficient use of available means to the ends that are desired, are commonly expressed motives for the technical interest of scientific knowledge. In effect, what has been

1) The technical interest of knowledge has been described and analyzed in relation to basic alternatives within the theory of science by e.g. Habermas (1971).

said earlier on the issue of the practicality of educational research in terms of steering and control can be seen as a manifestation of the concern with the technical character of theory and research. The typical notion of effectiveness in teaching and education may also be understood in the light of this feature.

The third feature of the reconstructed methodology to which we will direct attention is the normative character of research on teaching. The concept of normative research is problematical, as the continuous debate within the philosophy of science amply demonstrates, and the use of the term in research on teaching is typically circumscribed by various, often merely implied, meta-theoretical considerations. No attempt will be made here to analyze the concept as it relates to that debate,¹⁾ but we will only consider some aspects of the issue from the internal standpoint of predominant research.

The main paradigmatic orientation of the field, e.g. the "ameliorative" concern of curricular research (cf Kliebard, 1970) and the explicit search for a definition of "good" teaching within teaching methods research, is an obvious indication of the normative interests. This research is geared towards particular conceptions of the possible improvement of educational practice and, hence, it is clearly to be seen as normative. Other forms of research on teaching, e.g. instances of "basic" research, may have a long-range orientation towards the establishment of scientific theory, and researchers in such areas may even deplore the suggestion of a normative inclination. Notwithstanding the possible objections on the part of these researchers, we will, however, also regard such research on teaching as normative on the following grounds.

In research on educational phenomena, a terminological confusion between the scientific study of these and the phenomena themselves is not uncommon. So, for instance, Dunkel (1972) describes what he calls the "narrow view of science" by the concepts of descriptive, value-free and nomothetic research, seen as constitutive of this view, and he writes:

"According to this definition science is purely descriptive, the investigation of the relations among phenomena. But education is not, strictly speaking, descriptive although, of course, it makes great use of descriptive knowledge. Education's primary phenomena would simply not exist if it did not produce them itself. It is an 'operative science' (to use Bacon's term) or a 'productive science' (to use Aristotele's), not a descriptive one ...

Since, then, education does not aim at mere 'change' but at 'improvement' of some sort, education is inevitably involved in normative discourse and problems of value to an extent that the 'hard' sciences rarely are" (Dunkel, 1972, p 79).

1) Some considerations on this issue, from the standpoint of educational research, are presented by Hansen (1967).

How education and the science of education are necessarily involved in normative discourse and production according to this view is hard to see. That the practice of education is so seems to be a reasonable conclusion, but this does not necessarily mean that the scientific study of such phenomena is to be considered as normative in itself. No doubt, an argument could be made within the paradigm that a "purely descriptive" account can be given of the normative character of certain phenomena.

Hence, affirming that the practice of education is involved in normative activity does not settle the issue. What is at stake is whether the not uncommon affirmation of the "a-normative" character of scientific research on education can be taken for granted in the present effort to give an adequate description of the methodology in question. In effect, does the "reconstructed logic" correspond to the "logic in use" in this respect, to use Kaplan's (1964, p 8) terms?

To illuminate the meaning of normative research in the present context, we may place this concept in juxtaposition to what is generally regarded as its counterpart, i.e. descriptive research. Thus, for instance, Dunkel (1972) criticizes traditional research on education for being too "narrow" on the basis that its "descriptive" character does not fit educational reality. Instead, he argues, this research is in need of a normative basis. Considering descriptive research as the "investigation of the relations among phenomena", we may infer that such a normative basis would refer to the possible evaluative stances that may be taken towards these relations. This view on the distinction between descriptive and normative research seems to represent the typical conception within the paradigm, and when we suggest that predominant research on teaching is in fact normative we argue as follows.

With regard to research on educational objectives, one may consider the investigation of the relationship between such objectives and social structure, which is the topical issue in research on the "socialized" curriculum, as descriptive if and when it is geared towards the study of the co-variance of these phenomena, i.e. how the appearance of certain objectives in an educational system correlates in a particular way with certain phenomena of social structure. However, this mode of inquiry is not typical of the curricular research in question here. Instead, the point of departure is that a certain formation of social structure is taken for granted and the perceived problem of research is to inquire into the ways in which certain objectives may be functional to this structure. Thus, the issue is not merely to "discover" empirical relationships between two sets of phenomena, but to "justify" a particular relationship, e.g. in terms of efficiency or

a functional "fit". In this sense, this research may be considered as normative.

The issue is perhaps more complex with regard to research on teaching methods. In this case, the typical descriptive approach would be the investigation of empirical relations between teaching methods and other phenomena, such as time, personnel, educational materials etc, and also, of course, the curriculum and student learning. If interest is focused on the relations between teaching methods and objectives, the concern would be with the "discovery" of empirical co-variance in this respect, i.e. how the appearance of certain methods correlates in a particular way with certain objectives e.g. as defined by outcome. This kind of research is certainly carried out, but it is not an exhaustive feature of the typical case considered here. Rather, the focus is upon the establishment of knowledge pertaining to the optimal or most efficient relationships between the phenomena in question, according to specific criteria. Thus, a distinguishing interest is placed on the "justification" of particular forms of relations as somehow favourable to the pursuit of teaching, e.g. in terms of the accomplishment of certain objectives. It is in this sense that we may call research on teaching methods normative.¹⁾

The normative feature of such research, including "basic" research by means of experimentation, may be appreciated if considered in relation to the technical interest of nomothetic knowledge. Such knowledge can be thought of in the abstract as centered on all kinds of causal or functional relationships between phenomena.²⁾ For instance, information may be established which refers to the relationship between teacher behaviour and, say, the number of the teachers' own children. However, as Wallen & Travers (1963, p 449) observe, there is little likelihood that such a study would be carried out if the researcher did not believe that these relations were somehow related to perceived gains in terms of the learning process of the students.³⁾ Thus, the normative feature asserts itself not only in explicit ameliorative motives but also in implicit concerns with the relevance of research to the practice of teaching and learning.

The practicality of research on teaching can be seen as a matter of com-

1) Thus, the argument can be made within the paradigm that while theories of learning may be descriptive, theories of teaching are prescriptive or normative (cf Bruner, 1966).

2) It is possible to argue, as does e.g. Habermas (1977), that there is a necessary relationship between the technical interest of knowledge and particular forms of objectivity and lack of value-freedom, but this issue will not be discussed in this context.

3) See the quotation on p 83.

binning the characteristics of technical and normative concerns. Technical information, that is, derives its practicality from the normative features that are or can be built into such information. Not only the technical quality of the information, but its combination with a normative stance provides for its practicality. To know a technical means of achieving (or preventing) a certain end is not practical knowledge until the means and ends are deemed favourable and legitimate, i.e. when they are incorporated in a normative context of a hierarchy of means and ends. This circumstance, among others, speaks for the importance of considering curricular and teaching methods research within a common framework.¹⁾

Hence, we are concerned in this context with the kind of research on teaching that aims at the formulation of theoretical knowledge, e.g. in terms of student learning, which is relevant to the practice of teaching, whatever the character of this relevancy may be. In this sense, we could describe the normative feature as "normative relevancy", thus to satisfy those readers who may insist on the "purely descriptive" character of some research and simply rule out from the predominant scope the possible instances of research which may be seen as "normatively irrelevant".²⁾

In conclusion, we have reconstructed the general methodology of research on teaching in terms of its nomothetic, technical and normative features. Research so characterized, and the quality and relative weight of these features may obviously vary, will be seen as constitutive of the predominant paradigm in the analysis to follow. To summarize the reconstruction we may say that research on teaching is basically concerned with the establishment of generalized information pertaining to the efficient accomplishment of educational objectives by means of standardized methods of teaching. Another way of saying this would be that predominant research on teaching is generally concerned with the theoretical effort to establish an operative technology of teaching.³⁾

1) For instance, educationalists may express concern with a situation in which knowledge of "means" greatly exceeds the knowledge of "ends" (cf Good, Biddle & Brophy, 1975).

2) See e.g. Asplund's (1972) discussion of the concept of value relevance.

3) It should perhaps be explicitly stated here that technological rationality may manifest itself in a number of forms, of which those commonly called "educational technology" and "instructional technology" are but pregnant cases of the general form at issue here.

9. The Problem of Reification in Research on Teaching

So far in this part of the study, we have observed the general concerns within research on teaching with the interrelated issues of theory formation and the provision of information relevant to educational practice. Also, we have discussed a reconstruction of the predominant paradigm in terms of the methodological features of nomothetic, technical and normative research. Arguing that these features concern the formation of theory, the practical application of which pertains to the technological steering and control of the practice of teaching, we have concluded that a distinguishing paradigmatic interest is with the establishment of generalized knowledge of how standardized methods of teaching relate to the efficient pursuit of educational objectives.

The purpose of the present chapter is to illuminate some of the ways in which this interest may be pursued in actual research on the basis of a certain logic within the methodology in use, conceptually and operationally. In particular, we will discuss certain explicit or implicit stipulations that seem to be made within the paradigm as to the basic character of the central phenomena under consideration.

As a topical point of entry to this discussion, we may take notice of a certain controversy, which seems to have its theoretical origin in the recognition by some educationalists of the "artificiality" of educational phenomena. Thus, in the seventy-first yearbook of the National Society for the Study of Education, edited by Thomas (1972) and concerned with the philosophical redirection of educational research, the "artificial" character of such phenomena is stressed by both Gowin (1972) and Dunkel (1972) in their criticism of the prevailing views. Gowin (op cit) proceeds from what he sees as a "most significant fact about educational phenomena":

"They are man-made (artifactual), not natural. They are therefore not likely to yield laws and other modes of invariance such as the natural sciences report in that domain. Whatever regularities researchers are to find in educational phenomena will have been determined by human beings in

a social context. Normative judgements (...) condition greatly the phenomena to be studied. Change a belief system and the content of research reports will be very different" (Gowin, 1972, pp 9-10).

The notion of artificiality is used as a basis of discussing the possible distinctiveness of educational research and of criticizing the predominant view, which holds that educational phenomena are "natural". This specific circumstance has been observed previously in this study (see, e.g. the quotations on p 59).

"Kerlinger's position leads us to consider the conceptual and methodological problems of psychological and sociological research. He shares with Travers (and many others) the assumption that research is to discover laws, to make general explanations of natural events. If we recognize that educational phenomena are not the same kind of 'natural events' as those found in the natural sciences, then we have little or no reason to suppose that the theory of science which guides research practice in those areas where laws have been found will be the correct one for educational research" (Gowin, 1972, p 18).

It may seem that the problems being pointed to here concern an ontological issue in that they pertain to the "nature of nature" in the educational context. The positions of the "naturalist" versus the "artificialist" may as such appear as fundamentally irreconcilable at the level of research methodology, insofar as a number of strategic notions of the scientific task may separate the positions on this ground. However, the topical controversy may not be that thorough-going, since what appears as an ontological issue is perhaps more fruitfully to be seen as an epistemological problem.

When educationalists, like e.g. Kerlinger (1969, 1970), propose to call educational phenomena "natural", there are at least two different ways of understanding them. They may mean that the phenomena are to be seen as ontologically natural, as distinct from artificial in the present sense, or they may mean that the phenomena are "natural" in the sense that they are "real" and actually "out there", rather than being merely "invented" and only in the researcher's head. This distinction is sometimes blurred to the point at which it is impossible to discern the intended meaning, and methodological critique may thus easily by-pass the actual issue at stake. In fact, in a recent discussion on the character of behavioural research, Kerlinger (1979) takes the opportunity to spell out the meaning of "natural" in a way that makes it clear that he does not primarily intend to invoke an ontological issue.

"Explanation can only be of natural phenomena, and 'natural phenomena' mean occurrences in the observable world. Any phenomenon, to be a natural phenomenon, must be observable or potentially measurable or manipulable. It is not necessary that it be directly seen. But there must be some evidence of its manifestations in the empirical world" (Kerlinger, 1979, p 62).

This definition raises perhaps more questions than it answers, e.g. as to

the paradigmatic meanings of "observation" and "empirical", but in any case it seems clear that so far as this view on educational phenomena is concerned, what is "natural" may well be "artificial" too. The crucial aspect of "naturalness" thus rather seems to pertain to the "objective" character of the phenomena, as indicated by the following statement.

"They (the scientists; CF) set up their experiments 'out there'. The experiments take place, so to speak, apart from themselves and their influence and predilections. Instead of being in their heads, the ideas being tested are objectified, made objects 'out there', objects that have an existence, as it were, apart from their inventors" (Kerlinger, 1979, p 9).

Considering the controversy at issue as based on a dualist separation between what is or is not "man-made" in an ontological sense, it seems that the criticism from the "artificialist" position does not acknowledge the epistemological problem of both positions in this respect. The "naturalist" position may be taken to represent a particular epistemological standpoint, while the criticism seems to regard the problem of a distinctive methodology of research on educational phenomena as primarily a matter of ontology.¹⁾ In this way, the criticism may appear as merely a question of which agency is or should be in control over the "artificial" processes of education, once it is accepted that these processes are in fact "man-made". However, to avoid turning the issue into a more or less extra-scientific argument about such control and to maintain the present focus upon the very methodology of predominant research, we should first consider which kind of educational phenomena we are talking about.

It seems that predominant research on teaching takes a main interest in the problems of human learning. This feature is constitutive of the research under scrutiny in the criticism referred to above, whereas its own focus is placed upon issues of what and how to teach. These two kinds of phenomena, and their aspects of distinctiveness, may be important to keep apart in the context of what is natural and what is artificial.

With regard to the phenomena of human learning, most educationalists seem to agree that basic aspects of these are natural at the level of ontology. As to the phenomena of teaching, the situation seems more confused, but the common position is likely to be that these are regarded as artificial, although this term is perhaps not frequently used. Thus, at the level of ontology, the controversy referred to above may be superfluous,

1) Of course, the general issue of the distinctiveness of social science in relation to natural science is of basic interest here. For a succinct formulation of a pertinent effort to regard social science as a sort of natural science, see Homans (1967). In view of the discussions to come, we may just observe here how such efforts predominantly seem to pay no attention to the developments of e.g. physics during the present century.

insofar as two separate kinds of phenomena are involved.

The typical view in this respect seems to be expressed by Ebel (1969b), who affirms the artificial character of schooling and instruction but who also maintains that learning is a natural phenomenon. Learning is seen as a psycho-biological phenomenon as distinct from the educational problems of what to teach and how to promote learning. This position seems to incorporate the criticism at issue, since the artificiality of matters of teaching is granted while the phenomenon of human learning remains natural. The basic problem may then seem as just a matter of the practical and extra-scientific control over what to teach how in the educational setting. Consequently, the suggestion offered by Ebel (op cit) is to abandon "basic" research on teaching in favour of such research, which may provide directly relevant information in terms of decision-making. In effect, the feasibility of nomothetic research on instruction is ruled out on account of the lack of generalizability, as is also the case in the criticism by Gowin (1972) and Dunkel (1972).

Granted that the phenomena of teaching may thus be considered as "man-made", the natural phenomena of learning may still be seen as manifesting themselves in relation to environmental circumstances, the "natural" or "artificial" character of which may be taken as of no fundamental concern to the scientific endeavour. In this view, what matters is not the character of the environment in terms of natural events or social constructions, but the character of the individual's learning on account of whatever variation in the environment. In this sense, also, learning presents itself as the major aspect of educational change.

"The word education is used with many meanings, but in all its usages it refers to changes. No one is educated who stays just as he was. We do not educate anybody if we do nothing that makes any difference or change in anybody. The need of education arises from the fact that what is is not what ought to be. Because we wish ourselves and others to become different from what we and they now are, we try to educate ourselves and them. In studying education, then, one studies always the existence, nature, causation or value of changes of some sort" (Thorndike /1906/, 1962, p 55).

This statement by an early representative of the field of research on education may still be considered as consonant with predominant views as to the kernel of educational change. Since this kernel is situated in the problem of individual learning, being a natural phenomenon, a "naturalist" approach to the study of educational change may appear as only consequential. While all kinds of "artificial" phenomena may define the environment of such change, the basic interest of research within this paradigmatic framework is with such processes of change, which take place in the nature of learning.

It seems that a problematic feature of this methodological strategy comes

to the fore of research on teaching as a matter of the epistemological apprehension of the central phenomena. Since the psycho-biology of human learning is not at the center of this research, but rather the questions of what and how to teach, the basis taken in the ontologically natural may constitute an inadequate point of departure. Of course, while it may be granted that knowledge of the natural phenomena of the human constitution may provide important information relevant to teaching, this does not mean that most of the relevant phenomena in this context are natural, let alone that the most relevant are.

When educational change is conceived of in terms of individual learning, issues concerning the various "artificial" interventions in its environment may be seen as basically outside the scope of science. Since the scientific task may be taken to involve only the formulation of knowledge pertaining to the natural facts, social opinions and personal judgements about these facts may paradigmatically be regarded as extra-scientific in principle. When, however, the central phenomena are seen as social constructions in the first place, as in research on teaching, the very character of the scientific methodology may be at stake. When educational change thus concerns the social relationships of teaching and learning, the scientific task is more clearly infused with normative deliberations, and the mere reference to extra-scientific agencies may not be as easily maintained. The "objectivity" of scientific knowledge is then harder to regard as just a matter of degree, and the methodology may have to be considered in terms of the very epistemological basis of any claim in this respect. It is in this context that the controversy "naturalist versus artificialist" may gain in significance, as we will try to show.

Gowin (1972) contends that educational research is not likely to yield law-like propositions and that the content of research reports may be very different once certain belief-systems are changed. He comments on the so-called "two-thirds rule", referring to the frequency and distribution of verbal activity in the classroom that have been recorded as quite consistent over decades of educational research, and he writes that this "rule" would vanish once the "educational concepts which direct the educational practice" are changed (op cit, p 10). And he may be right, but that does hardly follow from the artificiality of the phenomena as such, however. In effect, his own example concerning the persistence of the "two-thirds rule" seems to negate his thesis of a lack of generalizability, at least within the limited time-span of available educational research during which certain changes in basic educational concepts undoubtedly seem to have occurred. In any event, we would suggest that the artificiality of the phenomena cannot be taken as

a basis of any assertions as to the stability, or lack thereof, that may characterize them, and that consequently the methodology will have to be considered from an extended point of view. The ontological notion of artificiality, that is to say, is not sufficient as a basis of methodological critique of the predominant paradigm in the present context.

If little can be said a priori about the issue of stability and generalizability from the standpoint of comprehending the phenomena as artificial, a quite important conclusion may be reached as to their de facto character. Whether such phenomena exhibit stability or not, and whether they can be described as law-like or not, their actual character has in fact been determined in and by social activity. Furthermore, this is the arena of their evolution in terms of educational change.

As a matter of "fact", there are in this sense no natural phenomena of teaching, whether pertaining to social relationships or knowledge, but such facts exist on account of a reduction of all historical alternatives through the course of the development and transformation of society and education. This course may be subjected to scientific analysis - concerning historical states or the present situation - pursued in order to ascertain the social conditions that manifest themselves in the establishment and development of the facts. Moreover, as a form of social activity, scientific research may itself stand on par with other forms of such activity with regard to the further evolution of the facts and their social significance. In this sense, different methodological strategies of research may serve different functions in the scientific and social process of the reconstruction of the facts.

On the basis of such considerations, a crucial feature of scientific methodology may be seen to pertain to the very problem of how the educational facts are actually sustained or transformed. The issue is then not just a question of whether the phenomena are "man-made" or not, but it extends to include the question of specifically how the phenomena are thus characterized in the process of their continued or discontinued realization. When, for instance, Gowin (1972) states that the content of research reports may be very different once certain belief-systems are changed, this may be a reasonable assertion, but the crucial problem of why and how such systems are or are not changed remains.

Thus, there are two basic methodological steps to be considered in this context; from "natural" to "artificial", and then from "artificial" to what we may call "transitional". The phenomena with which we are primarily concerned are not only artificial, in contradistinction to natural, but they may also be characterized by processes of transition, in the sense that their

properties may be fundamentally transformed as a function of social control. In so far as the phenomena of prime concern to research on teaching are socio-human in character, they are contextually defined within a totality of social relationships, situated in the historical specificity of past, present and future. Hence, while the notion of artificiality, as discussed here, may tend to direct attention primarily to the socio-historical origins of the facts, whatever they may be, the concept of transition thus points to the issue of the realization of the "man-madeness" of the facts in present and future socio-educational control. Including the steering exercised by science in the actual and potential transition of the phenomena, we may thus find an entry to a fundamental questioning of the very methodology in use within the predominant paradigm of research on teaching. And, we would suggest, it is in this context of the transitional character of the central phenomena that considerations on "artificiality" may gain their methodological impetus as a matter of epistemology.

Actually, the characterization of educational phenomena as either "natural" or "artificial" may be of secondary importance, in so far as the ontological affirmation of artificiality is not coupled with effective efforts to develop a proper epistemology for the study of such phenomena. If the same "naturalist" epistemology is in fact employed in theory and research, little may be won by calling the phenomena "artificial", except perhaps the stress on the significance of those extra-scientific measures that may be needed to handle the socially relative knowledge obtained. In terms of actual research strategy, however, the same methodology may nevertheless remain in basic respects.

Hence, the problem focused upon here is not that the artificiality may be denied ontologically in some cases of methodological deliberation within educational research, since on the whole this feature seems to be acknowledged in research on teaching, but that this character of the phenomena is not affirmed epistemologically. Whether the phenomena of teaching are apprehended as merely subsidiary to the natural phenomena of learning, or a certain methodology of research on natural phenomena is just adopted uncritically within an adjacent but in some respects fundamentally different field, the actual consequence is that predominant research on teaching entertains a kind of epistemology, which has specific functions in the study of social phenomena.

That the phenomena of prime interest to research on teaching are in fact social, rather than natural in the present sense, may be considered as acknowledged by predominant research itself. Teaching is actually conceived of in terms of teacher-student relationships as a means of meeting socially

defined objectives, and neither of these aspects is likely to be considered as ontologically natural by researchers on teaching. It is also on this basis of an affirmation of the social character of the main phenomena that a social role theory was used in chapter 6 to typify the theoretical orientation of such research. The present point, however, concerns the circumstance that although the phenomena may not be considered as ontologically natural, they are apprehended epistemologically as if they were. In this sense, research within the predominant paradigm indeed seems to be patterned after the natural sciences, as Bellack (1978) puts it.

In trying to illuminate the problematical ways in which research on teaching thus seems to reflect the methodology of the natural sciences, we will have to recognize first that reference is made to a particular paradigm of natural science, epitomized by classical physics, while modern developments, e.g. within quantum-mechanics, are not included in this epistemological pattern. In a sense, therefore, the comparison with "natural science" is obsolete, but in this context, which intends to take a point of departure in the predominant paradigm itself, it may be useful in pointing out the character of the topical problem. Thus, it seems that the common view of the natural sciences involves an assumption to the effect that in principle final knowledge can be obtained, in the sense that the objective facts "out there", including their processes of development and change, can be scientifically accounted for "once and for all". Given the general affirmation of the openness of all human knowledge, natural science is seen to build on the possibility that the natural facts are eventually to be fully discovered and subsumed under covering laws, unaffected by social and human desires and equally relevant to all human beings. This assumption, so fruitfully applied within the classical natural sciences, thus involves a basic concern with the facts of reality in the etymological meaning of this word as something "done" and completed; something entirely "out there" ready to be discovered and established with certainty as final knowledge within the particular scientific paradigm.

However shaky the basis of this epistemological assumption may have become in the course of development of physics during the present century, it seems to prevail within the predominant paradigm of research on teaching. It is perhaps most conspicuous in methodological deliberations that manifest a "basic" concern with the relations among "natural" phenomena in the way pointed to above and in which the method of experimentation is typically held in particular reverence. However, the same epistemology seems to be implied in the bulk of research on teaching, which lacks an explicit concern with the issue and fails to develop an alternative approach. Since the cru-

cial relations within research on teaching are those between acts of teaching and learning as social and human accomplishments, this explicit or implicit move of attempting to ascribe internal finality to their analytical features may appropriately be considered in terms of the problem of reification, this concept being used here in the following general sense.

"Reification is the apprehension of human phenomena as if they were things, that is, in non-human or possibly supra-human terms. Another way of saying this is that reification is the apprehension of the products of human activity as if they were something other than human products - such as facts of nature, results of cosmic laws, or manifestations of devine will" (Berger & Luckmann, 1972, p 106).

It seems that predominant research on teaching is characterized by systematic modes of reification by which its central phenomena are apprehended methodologically as final facts of the magnitude of the facts of nature, as conventionally conceived. At the level of ontology, the problem of reification manifests itself in the attempt to consider the phenomena of learning, in the context of research on teaching, as on par with their constituents in terms of e.g. biology or neuro-physiology. In this move, the features of human learning in terms of social and educational constructions are apprehended in a reified manner, making for the plausibility of a specific research strategy, which appears to be patterned after the natural sciences.

At the level of epistemology, predominant research on teaching seems to build on the invocation of the "natural" character of human learning and approach its central phenomena as "objective facts out there", to be studied by means of "neutral" methods of observation in order to eventually discover their internal lawfulness. The research strategy does not seem to allow for an epistemological affirmation of the possible interaction between the scientific methodology and the facts of its concern, nor of the socially relative significance of the knowledge actively constructed on its basis. Instead, the epistemological position of predominant research on teaching seems to entail a reified conception of the central phenomena in terms of the means and ends of teaching, and the "patterning after the natural sciences" thus basically seems to involve a problematical reflection of certain reified modes of scientific apprehension.

In chapters 9.1 and 9.2 respectively, we will try to demonstrate some aspects of how this takes place within research on teaching methods and the curriculum, and we will in particular consider the sociological implications of the problem of reification in these contexts. Basing the discussion on the standpoint that there can be no research on social phenomena without social theory, however fragmented or implicitly held and irrespective of the fact that the phenomena may sometimes be called "natural", we will then ob-

serve and exemplify some of the ways in which the problem of reification may manifest itself with regard to pedagogical sociology.

9.1 Reification in Teaching Methods Research

Notwithstanding the fact that different labels are often attached to the various sub-fields of research on teaching methods, there is a common interest in the relationships between teaching activity and its effects in terms of learning outcome. Whether focused upon educational roles, particular teacher characteristics, actual teacher behaviour or some other feature of the educational context, the ultimate concern is with the establishment of theory pertaining to the ways in which student learning, in a broad sense, may be more or less efficiently promoted by different forms of teaching. The paradigmatic case of predominant research may be epitomized by a basic concern with the constituents of "good" teaching.

Although much research on teaching methods is correlational and may be seen as "merely descriptive", the basic aim is to provide explanations of the process-product relationships involved in teaching and learning. This aim is primarily pursued by means of various forms of experimentation and quasi-experimentation. Typically designed to compare the relative efficiency of different teaching methods and to test hypotheses derived from theories of learning, the experiment is generally seen as the method, which is most favourably adjusted to the scientific task. Sometimes this method may even be considered as

"... the only means for settling disputes regarding educational practice, as the only way of verifying educational improvements, and as the only way of establishing a cumulative tradition in which improvements can be introduced without the danger of a faddish discard of old wisdom in favor of inferior novelties" (Campbell & Stanley, 1963, p 172).

It may seem as if the authors of this passage have forgotten to qualify their statement on the "only" way to achieve certain educational ends by the addition of some attribute like "statistical", but their views may instead be taken as an indication of the strength with which the paradigmatic conception of experimentation is maintained. Within the paradigm, the experiment is indeed typically seen as the "strongest" method that can be used in the pursuit of scientific knowledge. Therefore, we will focus on this method

in the present discussion of certain sociological implications of predominant research on teaching methods.

The paradigmatic concern with the establishment of generalized knowledge as to the relationships between teaching and learning implies that basic attention may be paid to what has been called the "nomological" experiment:

"This is one which aims at establishing a law, at proving or disproving some hypothesis or other. Sometimes a merely empirical generalization is in question... More typically, the attempt is to transform an empirical generalization into a law in the narrow sense, that is, to identify what is both necessary and sufficient for the empirically given connection, by varying the experimental conditions... The nomological experiment is designed to bring out what is essential to a certain effect" (Kaplan, 1964, p 151).

Much research on teaching methods attempts in this way to pursue knowledge of teaching and learning in terms of the possibility of establishing laws or law-like propositions. Basing the efforts in this respect on explicit or implicit stipulations to the effect that human learning is a "natural" phenomenon, this research typically seems to apprehend the phenomenon of teaching in terms of stimuli patterns or other constructs taken to be functionally related to the accomplishment of learning. Within the technological conception of teaching, the various features of actual teaching may thus be seen as technical modalities, which may have different degrees of efficiency in relation to learning. This conception is given a succinct formulation by two firm advocates of experimentation in the following way.

"A major portion of the ultimate product of teaching model development would be a set of laws of teacher behavior which would follow the general form $T = f(R_g, R_i)$. This symbolical representation has the following meaning. The behavior of the teacher T is a function of the goals to be achieved R_g and the present behavior of the pupil R_i . The design of a teaching method may have to assume that a response system of the teacher T can be developed which is appropriate and efficient for achieving R_g " (Wallen & Travers, 1963, p 490).

The authors admit that the possibility of defining the lawfulness of teacher behaviour in terms of such equations is "still remote", and that this approach is as yet merely an "ideal". Taking the paradigm in question for granted, we can but agree. In this context, the approach seems to stand for an ideal conception of how to establish and formulate scientific knowledge, and the mathematical equation is a format, which nicely brings out the pertinent etymological meaning of explanation as something made even or level. Actually, it may be regarded as a perfect way of expressing the facts of teaching and learning.

Mathematical equations of this kind state the facts in a precise meaning of the term, and the knowledge expressed, e.g. $1+1=2$, is perfect knowledge in the literal sense, inasmuch as the facts are to be seen as established once and for all, and there is not much to do about it in terms of human

activity and preferences. It seems that if we were to take the quoted conception seriously, the facts of teaching and learning would have to be apprehended within a similar framework of a closed finality, granted that assumptions as to the range of applicability could be explicitly maintained. To establish the lawfulness of teacher behaviour in this way, and by implication student behaviour as well, the constants and variables would have to be stated as in principle as final as in the purely mathematical case. The obvious "problem" within pedagogy, however, is that in this case we are dealing with social relationships rather than mere figures.

From the standpoint of the predominant paradigm, the problem pointed to here may be seen as primarily one of validity. With regard to the question of internal validity and the control exercised by the experimenter in order to account for the possible influence of various extraneous variables on the observations, the stipulation of finality may be seen as a mere technical move within the framework of the methodology. Although the problem of maintaining an adequate internal validity may be profound within research on teaching, this problem and its proper means of resolution are well known within the statistical theory of sampling and design. Adequate use of statistics may thus allow for a correct assessment of internal validity, and the stipulation of finality may be kept in check within this framework.

The problem of external validity, however, does not lend itself to such technical solutions. Instead, this problem may raise certain doubts as to the validity of the predominant methodology itself in the context of the learning experiment on teaching. We will consider this problem in terms of the sociological implications of the logic of inductive generalization which seems to inhere to the standard procedure of experimental studies in the field.

"Whereas the problems of internal validity are solvable within the limits of the logic of probability statistics, the problems of external validity are not logically solvable in any neat, conclusive way. Generalization always turns out to involve extrapolation into a realm not represented in one's sample. Such extrapolation is made by assuming one knows the relevant laws... Logically, we cannot generalize beyond these limits; i.e. we cannot generalize at all. But we do attempt generalization by guessing at laws and checking out some of these generalizations in equally specific but different conditions" (Campbell & Stanley, 1963, p 187).

Thus, the "logic" of inductive generalization is in principle to be seen as a matter of faith, and the external validity depends upon the invariant recurrence of phenomena outside the realm of investigation in any specific instant. Certain assumptions must be made and their relevance will have to be taken for granted. Focus is placed on the particular way of framing the issue at hand, and the general context of the specific inquiry is basically left to hope and good judgement. It is in this framework of a "guessing at laws" that the stipulation of finality - apparently of crucial significance

to the fruitful application of the classical methodology within the natural sciences - may be considered as a basic aspect of reification within research on teaching methods. Thus, it seems that experimentation in this field is typically based on an implicitly sociological notion to the effect that adequate knowledge of teaching efficiency may be pursued in exemption from socio-historical specificity.

"The interaction of history and X would imply that the effect was specific to the historical conditions of the experiment, and while validly observed there, would not be found upon other occasions. The fact that the experiment was done during wartime, or just following an unsuccessful teacher's strike, etc., might produce a responsiveness to X not to be found upon other occasions. If we were to produce a sampling model for this problem, we should want the experiment replicated over a random sample of past and future occasions, which is obviously impossible. Furthermore, we share with other sciences the empirical assumption that there are no truly time-dependent laws, that the effects of history where found will be due to the specific combination of stimulus conditions at that time, and thus ultimately will be incorporated under time-independent general laws" (Campbell & Stanley, 1963, p 190).

Thus, the authors correctly point out that there is no experimental and statistical design, which may properly cope with the possibility of historical specificity and future variations. However, the "empirical assumption" that such specificity will eventually be subsumed under covering laws, as well as the contentment with "guessing" and "assumed extrapolations" as a basis of external validity observed above, may seem as a poor consolation in the present and as a manifestation of a shaky faith in scientific potentials beyond statistics. In effect, in so far as such a view on educational problems leaves the possibilities of explicit sociological theory unaccounted for, it may seem to amount to little more than an apology for an empiricism faced with a dilemma.¹⁾

Had the experimentalist on teaching methods only to bother about extraordinary events like "war" and "strike" as possible sources of a damaging infliction upon the external validity, the problem would be simple enough. However, if we affirm that even events of less palpable magnitude may not be easily depicted, and that our recognition and definition of such events may be dependent upon our specific interpretations of social reality, we may also acknowledge the possibility that the "normal" situation may be likewise apprehended on the basis of mere conventions. Our comprehension of a certain situation as an empirical reality does not perhaps include firm notions as to the conditionality of "non-war" and "non-strike" in the same way as their opposites in our vocabulary, but they may nevertheless take on

1) Moreover, the possibility of effects in line with the "self-fulfilling prophecy" may be taken into consideration in this context (cf chapter 16).

a similar significance within theoretical analysis.

If we prefer to exclude our conditional conception of empirical reality from the scope of "history", and the facts of this reality from their "interaction with history", we may improve on the credibility of a specific scientific methodology, but we will not escape the functions of so doing in terms of the very social conditions that sustain this historical reality.

As far as the principles of the predominant scientific methodology are concerned, their application within experimental research on teaching methods seems to entail an implicit stipulation of a "natural" social context of the classroom in which the study of learning may be thought of as carried through in a "neutral" manner. Since this methodology tends to evade the issue of the historical and sociological analysis of the data established on its basis, e.g. by reference to the "proper" scope of science in relation to external agencies of policy-making, it seems that the educational order is typically apprehended as merely a matter of the control being established as to the cognitive processes of learning. On this basis, it may then seem plausible to bracket the institutional mechanisms of social control as irrelevant to or inevitably outside the scope of pedagogical concerns.¹⁾

In this context, however, it is important to acknowledge the features of social control, which function within the institution of education as such. By its very inception, the concept of institutionalization pertains to the structure of social control. Any particular institutional structure is conceivable as a means of social control in itself, and to rule out this feature from the context of teaching is not just a matter of the scope of particular studies, but it concerns the possibly inadvertent effects of the adoption of the very methodology at issue. The effort to bracket the institutional order and its features of social control, thus to establish a "neutral" arena of cognitive steering and control, does not alter the social reality of the institution, but the features of social control will enter the methodology from the back, so to speak. That the methodology takes recourse to a certain reductionism in terms of the psychology of learning does not mean that it simultaneously is able to evade its implicit functions in terms of the social control of institutionalized structures, and in particular in terms of the understanding of their transitional character and the conditions of change.

The adoption of this methodology, which seems to be based on a stipulation of a possible finality of the phenomena, implies that the classroom

1) The distinction between cognitive and social control is further discussed in chapter 10.

practices may be studied as to their internal structuring in isolation from what is in principle considered as external to the "laboratory". So far as the scientific methodology of such experimentation is concerned, the problem of external validity will have to be left to good hope and assumed extrapolation. Granted that it may provide for important information on specific issues of practical concern under limited conditions, the methodology may only pursue its nomothetic purpose in so far as the situation beyond the experiment may be taken to be stable or invariant as to its socio-historical features. This, in a word, amounts to reification of the phenomena at issue, serving as a principal precondition for the validity of the methodology itself.

Thus, the external validity in nomological experimentation on teaching levels with the reification of the external context, in so far as this context is ascribed finality on the basis of more or less implicit assumptions as to its invariant relations to the phenomena under explicit consideration. A reified - "natural" - socio-historical context of inquiry is to be taken for granted, and the external stability of relevant features is assumed as a basis of internal relevance. The effects of experimental manipulation appear within the confinement of the "natural" setting, and their validity leans on inductive generalizations outside the range of this paradigmatic conception of scientific methodology. Thus, the external validity of the knowledge obtained depends upon the practical meaning, i.e. the actual applicability, of the reified sociological stipulations involved in this kind of pedagogical research. The persistent attempts to define "good" teaching on this basis, for instance, will have to be seen in this light of a paradigmatic confidence in the adequacy of reified stipulations as to educational transition in a socio-historical context. We will return to the issue of how this adequacy may be ascertained in Part III of this study.

9.2 Reification in Curricular Research

In Part I of this study, we described a number of instances of research on the "socialized" curriculum, and in this chapter we will try to extract some common methodological features of such research with regard to the problem of reification. The scope of the previous presentation included the early

efforts within the "scientific movement" by educationalists like Bobbitt and Charters, the "demand analyses" carried out in Sweden during the formative years of the comprehensive school and the method of "job analysis" as exemplified by the case of the project PIL. In the following, we will expand the range of considerations as well as specify some focal concerns. A common denominator of the different approaches considered is that the problems of the curriculum are apprehended from the standpoint of a scientific analysis of social structure, conceptualized in one way or the other. The basic issue is how information on the character of social reality is to be taken advantage of in the construction of curricula.

We will concentrate on the method of job analysis in relation to the general character of the field of research on the "socialized" curriculum. This method may be seen to epitomize several basic aspects of the general character of such research, as was observed in the presentation of the project PIL. Furthermore, this approach seems to be rather typical of the ways in which the practical problems of curricular planning are often conceived. In Sweden, this circumstance may be observed through a glance at the R&D projects sponsored by the National Board of Education during the last decades.

Job analysis is commonly considered as an empirical approach to the determination of educational objectives and training needs. Its claim for scientific status is as old as the "science of education" itself, and some of its basic tenets can be easily traced to the fore-runners during the early decades of the present century. Originally developed within industry, its further elaboration has to a large extent been a task for industrial psychologists, studying the worker's productivity, adjustment, motivation, and so on. Vast resources have been allocated to these fields of scientific research, and a voluminous body of literature within business administration and industrial psychology can document its results. An illuminating example of how the "scientific method" is often conceived of within this tradition is offered by Ghiselli & Brown (1955).¹⁾

1) The meta-theoretical basis of job-analysis may appear straight-forward, and formative stipulations are seldom explicitly considered in the scientific arguments. However, like many other techniques within the predominant paradigm, it seems to be implicitly based on the assumption that knowledge of "reality" may be immediately pursued through the topical procedures of empirical investigation. To indicate its methodological character, we may say that it is firmly anchored in a psychometric framework (cf Esland, 1971), and in its commitment to the empirical and allegedly neutral facts as the only proper basis of analysis, it relates closely to what has been aptly called a "strategy of subordination" (Eriksson, 1972).

As a general point of departure to the discussion of job analysis, we may consider some basic features of a wider approach to the problems of curricular planning, the Tyler Rationale. Originally presented in the late 40's (Tyler, 1949), this is probably the best known approach in the area and it is frequently referred to in current discussions on the subject. Although its approach is broader than the one commonly associated with job analysis, the general aims and methods seem to correspond.

The prime problem of the Rationale concerns the statement of educational objectives, since this is seen as the basis of the subsequent efforts to establish the educational experiences, which are to result in the accomplishment of the objectives, and to organize these experiences efficiently and to settle the means of evaluation. This first step is described by Tyler (op cit) to be related to three sources of analysis; studies of the learners, of contemporary social life and of the subject matter. Our present interest is primarily with the analysis of "contemporary social life", although it is not very clear from the presentation in which ways the various sources are distinctive (cf Kliebard, 1970).

Curriculum construction on the basis of studies of contemporary social life is, as described in the Tyler Rationale, following a logic very similar to that of job analysis and of the work of e.g. Bobbitt. Thus, for instance, while the early research on the subject, like the analyses described in chapters 3 and 4, relied on "expert opinion" and "sound judgement" to make the necessary choices among feasible objectives, Tyler (op cit) refers to a "philosophical screening" as a means to the same end. Unfortunately, however, he has little to say on the issue of how to define and make practical use of such a screening in actual curricular research.

A general reason for the sociological inquiry into curricular matters is to be found in the possibility of establishing a firm empirical foundation of the determination of educational objectives and training needs, thus to evade the disadvantages of rigid tradition, personal opinion, faddish speculation, and so on. This reason seems to penetrate the research efforts in this field, and the method of job analysis is often seen as a possible remedy in this respect. The Tyler Rationale is interesting, therefore, since it affirms the necessity of involving some kind of "philosophical screening" in the endeavours. In job analysis, such considerations are often seen as excluded from the realm of scientific analysis, in that such analysis itself seems to be regarded as neutral to the external agencies of policy-making.

The wider social significance of the educational program at issue is sometimes explicitly referred to in job analytical studies. That the sociological views of the "scientific movement" during the early decades of the

present century are still of interest in current studies is exemplified in the following quotation.

"In our society the general goal of education seems to be to develop human qualities in the best way possible. Efficiency within many different areas is striven for, one foundation of a progressive society is thought to consist of specialization of the social functions, and this specialization is thought to produce a social efficiency which, in its turn, is profitable for the community. These gains can only be acquired by the provision of specialized training, job training" (Gestrelus, 1972, pp 14-15).

The general view on the sociological matters involved in job analysis seems to be that the jobs are seen to exist as facticities in "society", and it is taken to be the task of education and training to provide for the necessary qualification of the individuals, who are to carry out the jobs. Typically referring to the kind of role theory, which was described in chapter 6.1, the analyses try to abstract the "nomothetic role" from the actual individuals in the social position under consideration, thus to establish the general functions of the job. As the jobs are thus seen as existing in abstraction from the particular individuals, the task of education may be seen as a matter of placing the "nomothetic" and "idiographic" dimensions of the system into adequate correlation. On the basis of existing individual qualifications, the educational program is then to promote such aspects of knowledge, skills, attitudes etc, which the individuals do not already command satisfactorily for adequate performance of the jobs (cf Bobbitt, 1918; Gestrelus, 1972).

As discussed in several instances in Part I, scientific analysis of the present kind thus tries to ascertain the institutional character of the social situation for which the individuals are to be educated. In the efforts to describe the institutional aspects of the jobs or roles, however, the analyses typically seem to rely upon the investigation of social opinions, whether in the form of demands and expectations within expert and other reference groups or statements in official texts, curricula, regulations etc. A persistent problem in this respect, observed already by the curricular theorists within the "scientific movement", is that such sources do not always agree upon what is to be regarded as the most important aspects of a certain job or role. Hence, a number of ambiguities may appear in the attempts to describe a "net balance" of the demands and expectations to which the educational program is to accommodate. Some of these ambiguities were discussed in chapter 4 in relation to the project PIL.

The general problem pointed to here concerns the apparent confusion within many job analytical studies of the features of institutionalization and manifest opinions. Explicit manifestations of social norms do not necessarily have to be taken at face value, and their functions may not be limited to

what is intended and recognized in a particular situation, and so on. With the analytical commitment within job analysis to the everyday validity of empirical opinions, however, follows that the "latent functions" (cf Merton, 1957) of such manifestations are typically neglected in favour of a focus upon the systematization of the various demands and expectations. The research intent is to study the institutionalized features, i.e. the "nomothetic dimension", in contradistinction to the characteristics of the individuals who happen to occupy the positions, and these features are thus taken to find decisive expressions in such opinions.

This procedure may be considered as a violation of the very concept of institutionalization, as Dahrendorf (1968) points out. The effects of institutionalization can hardly be adequately articulated through the mere investigation of more or less public opinions. The whole point of trying to extract a "nomothetic dimension" rather seems to be that the institutional structure may be seen as standing over and against the particular individuals, who have to carry out certain functions, within certain "limits", regardless of the character of specific opinions as to these functions. To inquire into the processes of institutionalization in this sense, the analysis would have to consider the actual potency of the expectations in terms of sanctions in use within the structure, as well as the determinants of individual behaviour that may not manifest themselves in explicit opinions.

In any event, we may just observe here that such a task would require an explicit sociological theory to supplement the psychometric notions involved in this kind of curricular theorizing. These notions, however, may be considered as closely related to an implicit sociological standpoint, which involves the assumption of some kind of "natural" social order to which the educational program in question is to accommodate on the basis of the scientific analysis of the "facts". In chapter 9, we discussed some aspects of these notions in terms of the "artificial" character of educational phenomena. In the present context, it seems proper to approach the methodological problem of dealing with such "artifacts" as a matter of the scientific apprehension of social facts.

In the tradition of social science, this problem is very much related to the contributions by one of the "founding fathers" of sociology, Emile Durkheim, who devoted much of his work to this very issue of the facticity of social phenomena. Still of central concern to the field of sociology, Durkheim's methodology seldom seems to be recognized within educational research and, for instance, the controversy concerning the "artificiality" of educational phenomena may appear as an "educational" issue, void of historical perspective and insulated from the wider context of social philosophy.

In his famous presentation of the rules of sociological method, Durkheim defines a social fact in the following way.¹⁾

"A social fact is every way of acting, fixed or not, capable of exercising on the individual an external constraint; or again, every way of acting which is general throughout a given society, while at the same time existing in its own right independent of its individual manifestations" (Durkheim, 1966, p 13).

If we extract the "telling terms" of this definition, i.e. "external constraint", "general" in society and "independent" of "individual" manifestations, we will have an indication of the sui generis character ascribed to social facts by Durkheim. Society, in its character of social facts, relates to the individual as an external facticity, and the system of education is undoubtedly a part of this facticity:

"Indeed, education, as practiced in a given society and considered at a given moment of its evolution, is a totality of practices, of ways of doing things, of customs which constitute perfectly defined facts and which have the same reality as other facts. They are not, as has been believed for a long time, more or less arbitrary and artificial contrivances which owe their existence only to the capricious influence of indeterminate wills. They constitute, on the contrary, real social institutions" (Durkheim, 1956, p 94).

Thus Durkheim, being a scholar of both sociology and education, clearly sees the institution of education as an instance of the external facticity of social phenomena. Moreover, the system of education is considered as an epitome of social facticity, inasfar as education aims at the socialization of the child and to this end exercises a pressure, which is social to its very "nature" and in which e.g. parents and teachers are mere representatives and intermediaries (Durkheim, 1966, p 6). From this standpoint, Durkheim is harsh in his criticism of those who approach these issues from a voluntaristic or a psychologistic standpoint, so characteristic of much research on education. Nevertheless, his methodology is in some respects closely related to what seems to be implicitly advocated within research on the "socialized" curriculum. That this is so can be brought out by taking a look at the most basic feature of this methodology.

1) In referring to Durkheim's methodological position, we may observe an implication of particular concern to curricular theorizing. While our discussion focusses on social structure in terms of institutions as social facts, Durkheim's view of society as a moral reality can be easily related to the general issue of educational knowledge, e.g. as defined by the curriculum. For instance, the extensive debate on the "structure of the disciplines" as a basis of the formulation of curricular objectives can be interestingly related to an extension of Durkheim's notion of the sui generis character of social facts. Since that discussion, however, is somewhat outside the scope of our present concern it will not be dealt with explicitly here. For a summative view on some pertinent issues of the debate, see e.g. Kliebard, 1965; Lawrence, 1969; Macdonald, 1965; Martin, 1969; Phenix, 1962.

"The first and most fundamental rule is: Consider social facts as things" (Durkheim, 1966, p 14).

According to the corollaries to this first rule of Durkheim's sociological method, social phenomena should be studied as external objects, and all preconceptions should be eradicated so that the phenomena can be characterized by elements essential to their nature and independent of individual manifestations. The reason for this prescription is, of course, to provide for the prime concern of this scientific methodology with the study of the phenomena in their objectivity, thus to make possible adequate explanations in terms of origins and functions. Although not all educationalists seem inclined to appreciate Durkheim's explanatory motive, his descriptive method seems to be very much alive, at least implicitly, in the research at issue here.

Research which focuses on the character of social structure, e.g. as a basis for curricular construction, has an obvious interest in the analysis of the objectified features of such a structure, and the Durkheimian notion of the sui generis reality of social facts may provide a working conception for these endeavours. Thus, job or role analytical studies may be explicitly geared at the nomothetic dimension of institutional reality in the efforts to establish the social facts of the job or role, as a prelude to the determination of the educational objectives and training needs that are functionally related to these facts. The ideal position of the researcher, as pictured in this effort to get at the empirical facts, is that of the neutral observer, who merely records the facts and offers an external interpretation of their structural properties. Later on, some kind of evaluative screening of the empirical facts may be introduced, but it lies at the heart of this scientific ideal to give an accurate account of the objective facts as they present themselves to the unattached researcher.

It seems that the application of this methodology manifests itself as a massive reification of social structure within educational research on the "socialized" curriculum. Social structure is indeed apprehended as a "thing" in the idealized reconstruction of the methodology, although this ideal may not be fully realized by the methodology in use. The intent is no doubt to establish the "objective facts" by means of a suitable reification of social structure, but the typical result is rather the reification of inter-subjective opinion. The nomothetic character of social structure is thus often confused with social-psychological notions of the functioning of normative expectations, and the description of social structure as a social fact, in Durkheim's meaning, is turned into a description of manifest opinions in a manner, which is entirely void of socio-historical perspective. Thus, in the

ideal-typical case of this kind of research, social opinions are apprehended as self-contained facts without any recognition of their differentiated origins and functions as to socio-historical specificity.

Hence, a critique may be levelled against the research on the "socialized" curriculum from an immanent position from which it is argued that the aim to establish the nomothetic facts of a social role or job is not adequately carried through. This kind of criticism may no doubt be seen as quite devastating, since it may be regarded as an indication of the poor state of sociological theory within such research, but we will not pursue this argument here, since it is of minor importance to the present descriptive framework.¹⁾

It seems that the reification of social structure is a characteristic feature of research on the "socialized" curriculum, whether related to the early "scientific movement", the Tyler Rationale or the kind of job analysis that we have focused upon in this chapter. Social structure is apprehended as a set of ossified entities interrelated by certain established functions, which appear as final facts and, as far as the scientific methodology is concerned, as beyond the scope of deliberation by the individuals, who "happen" to occupy the positions in the structure. In methodological principle, the jobs and roles are conceived of as externalized facticities to which the individual may only relate as to a "thing in nature".

In this sense, reification serves a crucial function in the attempts to define the "homo discipulus" of effective education on the basis of a "socialized" curriculum.²⁾ By means of a stipulation of reification, the logic of scientific inquiry is made simple, data can be easily gathered, and the information may be handed over to external agencies for "philosophical screening" and so on. As we will discuss in Part III, however, the problems of the methodology may turn out to be a little more complicated when the social functions of the stipulation are explicitly considered. Presently, we will just make the point that when this kind of research is used for the establishment of a "socialized" curriculum, reification may be regarded as a basic methodological principle.

1) See e.g. Dahrendorf's (1968) criticism of the study by Gross et al (1958).

2) The notion of a homo discipulus will be further discussed in chapter 17.

10. The Technological Function of Research on Teaching

In the previous chapters, we have focused attention to certain theoretical and practical aspects of research on teaching within the predominant paradigm, epitomized by the general features of nomothetic, technical and normative research. Thus, in chapter 6.2, we suggested that the theoretical character of predominant research may be considered as an aggregation of structural-functional sociology and behavioural psychology. In chapter 7, the practical character of such research was discussed in terms of the contributions to the steering and control of educational practice. As a general conclusion, we stated in chapter 8 that the general aim of research on teaching may be conceived as the formulation of theory, the practical explication of which concerns the feasibility of accomplishing educational objectives by means of standardized methods of teaching.

In this sense, we may regard the methodology in use within the predominant paradigm as technological, thereby referring to this interest in the establishment of general principles pertaining to the possible attainment of predetermined ends by means of standardized procedures. Hence, we may speak of technological steering and control when such principles are applied to the intentional and actual determination of educational processes.

Technological control within teaching presupposes the establishment of well-defined objectives and the availability of efficient methods to pursue these objectives. The formulation of such ends and means of teaching may be seen as a task for curricular and teaching methods research respectively, and the curriculum and the teacher may be designated as educational agencies of steering and control, in their turn influenced by research.

In this chapter, we will consider the feasibility of technological control on the basis of scientific theory as a matter of the kind of explanation, which is offered within the framework of the predominant methodology. Thus, we will expand the previous discussion by focusing on what may be called the "technological function" of explanation.

"The most familiar and most often discussed function of explanations is the technological: they are used for a better adaptation to the environment, a more effective adjustment of available means to desired ends. In so far as explanation makes prediction possible we can control events, or at least prepare ourselves for what is to come if we are helpless to prevent it. In so far as explanation provides understanding we can better orient ourselves, choose more wisely among the courses of action open to us. The technological function, in short, is that conveyed in the proposition that knowledge is power" (Kaplan, 1964, p 356).

Within teaching methods research, the method of experimentation may be seen as the "strongest" means of establishing explanations as to the relationships between teaching and learning. In curricular research, the common method of survey investigation is sometimes seen as "merely descriptive" and, therefore, we should point out that such research may well have explanatory intents. Thus, the aim of this method is described in the Encyclopedia of Educational Research in the following way.

"In explanatory (sometimes called analytic) survey research, the sample is selected with the intent of making statements about theoretical relationships and processes within the population... In general, explanatory survey research is similar to traditional experimental research in that it is designed to explore questions of cause and effect" (Herriot, 1969, p 1400).

The explanatory purpose is pursued by means of statistical cross-tabulation in which possible sources of variance are systematically brought to the surface, and the co-variance between variables is tracked down until valid causal or functional relationships can be established. For instance, hypotheses pertaining to the relationships between certain social contexts and particular attitudes or patterns of behaviour may be tested with the aim of explaining such attitudes or behavioural patterns. A number of pertinent methodological issues in this context are discussed in e.g. the reader by Lazarsfeld & Rosenberg (1966).

Although few survey investigations within research on education may be explicitly explanatory in intent, many studies rely on the basic logic of explanatory efforts in the determination of sampling design and in the interpretation of the results. Thus, specific groups may be studied on the assumption that their social locations have a systematic bearing upon the findings, and the characteristics of the groups are conventionally seen as indicative of some features of these locations. As in the case of the PIL study described in chapter 4, the opinions expressed within different groups may be considered as conditioned by the difference in positions within the social structure. The educational system is seen as structurally interrelated by certain functions, and the opinions expressed within the various roles are apprehended as pertaining to the specific functions of the different roles within this structure.

In general, it seems that this explanatory model inheres to research on

the "socialized" curriculum at large. The main issue in such research concerns the determination of the kinds of knowledge, skills, attitudes etc, which may relate functionally to the efficient performance of the jobs or roles in the social structure. The research aims at the establishment of the functional requirements of the jobs or roles within the social structure under consideration, and the interpretations offered of these requirements are typically that they are functional to the efficient maintenance or immanent development of the system. This seems to be a basic theoretical standpoint of the activity analyses within the early "scientific movement", the Swedish "demand analyses" related to the curriculum of the comprehensive school, the concern with "contemporary social life" within the Tyler Rationale, and the job and role analyses in general as these have been described earlier in this study. In short, the explanatory models involved in this kind of research seem firmly anchored in a structural-functionalist approach to social reality.

The basic tenets of structural-functional sociology have been indicated in the discussion of role theory in chapter 6. No doubt a most typical approach to sociological inquiry within the Anglo-American tradition during the present century, this orientation seems to have been adopted within much theory and research on education as primarily a "practical" model of investigation and interpretation. In the present context, we thus suggest that the explanations offered within research on the "socialized" curriculum are typically functionalist in character.

We will now turn to the kind of explanation provided by research on teaching methods, considered in its "strongest" case of experimentation. Typically, such research sets out to investigate efficient ways of teaching on the basis of various theories related to the behavioural psychology of learning. In general, the aim of such research is to establish theoretical principles as to teaching-learning interaction and to explain how learning occurs as a consequence of teaching.

The character of the explanatory models in this field may be exemplified by reinforcement theory. In broad outline, this theory proposes that if a response is reinforced, it will tend to be repeated. Given adequate reinforcement, the response will occur over and over again. The systematic character of the phenomena is given the general explanation that a response occurs and reoccurs because it is reinforced (cf Kerlinger, 1970, p 11). In this vein, it is possible to elaborate sophisticated accounts of how specific aspects of learning may be explained as a consequence of particular moves of teaching. This model of investigation, we would suggest, pertains to a basic case of the behaviourist framework of explanation involved in the typi-

cal learning experiment on teaching.

The structural-functionalist and the behaviourist modes of explanation exhibit a number of corresponding elements in terms of meta-theoretical features. Without going into details at this point, we may just observe the following similarities. Behaviourist psychology focuses on the observable consequences of external influences on the behaviour of the individual. The internal processes of the individual are in principle placed within brackets in that the scientific concern is with the establishment of objectified functional relationships. Structural-functionalist sociology focuses on the resulting consequences in a social system of the interplay of structural units, and studies how particular units are externally related to each other. The internal processes of a certain unit are seen as possible to bracket in order to arrive at interpretations of objectified functional relationships. In the present context, we may observe how reification serves as a basic stipulation within both modes of explanation, in that the internal processes of the central units, i.e. the individual or the social role, institution etc, are apprehended, in methodological principle, as of no fundamental concern to the scientific endeavour.

We will consider these explanatory frameworks in trying to bring out the meaning of technological control. The unsatisfied student of research on teaching may ask why certain social functions exist and why certain reinforcement enhances the tendency of specific responses to be repeated. Well, this is another issue, as the structural-functionalist and the behaviourist may contend. We do in fact have explanations, as far as these theories are concerned (cf Kerlinger, 1970, p 12). The contentment with these kinds of explanation may be seen in relation to their technological function. The ultimate criterion in this respect is that this may actually be taken as the way "it works", and that the technical information thus provided may be used in order to improve on the efficient functioning of the system at issue.

A crucial feature of the technological conception of teaching is to be found in the circumstance that the explanations may provide a basis for prediction and control by some external agency in relation to the central problem, in this case primarily the learning outcome on the part of the students. When reference is made to the scientific aims of "understanding, prediction and control", these faculties are not thought of as residing in the "subjects" of focal concern but, on the contrary, such location of these capacities may in principle only disturb, or even ruin, the rationale of the methodology. This feature will be further discussed in later sections (e.g. chapter 16), and presently we will just take notice of how the scientific methodology is thus geared towards external control.

The curricular research in question may be seen as primarily concerned with the issue of how the educational objectives are to be brought under the control of the external agencies of policy-making, thus to provide adequately for the social functions of the educational system. The teaching methods research may be seen as primarily concerned with the provision for efficient control over the processes of learning by the external agency of teaching, itself to be externally controlled by the curriculum and other frames in the teaching situation due to decisions taken, or not taken, within the structure of policy formation.¹⁾ Thus, the reconstructed logic may be seen to involve a chain of control in which the steering of one agency is controlled by another, the total context being controlled by the ever increasing rationality (in a Weberian sense) of science and policy-making in society at large.

For the sake of the following arguments, we will make a distinction between two kinds of steering and control in the context of teaching and learning; social and cognitive. Thus, we will use the term cognitive control to refer to such mechanisms through which the individual is seen to establish knowledge (in a broad sense including skills, attitudes etc), which is to say that the individual is seen to gain cognitive control in and by learning. Social control, on the other hand, will refer to the mechanism through which a certain social order is seen to be established and maintained. Obviously, these two kinds of control may be interrelated in different ways in specific cases, but the important thing here is that the two categories can be kept analytically apart. To illuminate the relevant feature of the distinction we could say that while a psychologist of learning would be primarily interested in the character of individual cognitive control, a sociological role theorist would be more concerned with the social control of a certain institutional order. As in chapter 7, we will use the term "steering" to refer to such activities, which aim at the establishment of control.

It seems that predominant research on teaching focuses on the features of cognitive steering and control, while less attention is paid to the problems of social steering and control. Typically, teaching is apprehended as a matter of the cognitive steering exercised by the stimuli of the educational situation and the cognitive control gained by the learner or, alternatively, the teacher and the learners are seen as involved in an interactive process of establishing such control. The cognitive processes are seen as mediated by the teacher, who is supposed to provide the conditions for the efficient

1) For a discussion of the concept of educational frames, see e.g. Kallós (1976) or Lundgren (1972).

pursuit of cognitive control on the part of the learners.

This conception is perhaps most articulate in the case in which teaching is approached on the basis of a theory of learning within the framework of a "behaviour-control model" (Nuthall & Snook, 1973). Of course, this basic model can be extended to include considerations on the social context of teaching. Even when focusing on learning and the establishment of cognitive control of a certain subject-matter, research may consider the character of the social situation in which such control is to be enhanced. Hence, the social context of teaching may be referred to in terms of "relevant variables" (Gage, 1963, p vii), "situational variables" (Wallen & Travers, 1963, p 491) and so on. Also, within research based in a "behaviour-modification model" of teaching (Nuthall & Snook, op cit), particular emphasis may be placed upon the features of social control with regard to overt student behaviour and the teacher as a manager of the classroom. However, even when the social character of teaching and learning is explicitly taken into account, it seems that research on teaching is typically confined to particular notions of the social order. In general, it seems that predominant research provides a specific form of account of the fact that any method of teaching refers not only to the cognitive control of learning but also to the social control of the learners.

As discussed in chapter 9.1, the reification of social structure involved in research on teaching methods pertains to the attempt to consider the possibility of an internal lawfulness of teaching and learning within a social arena, which appears as "natural" or "neutral" in relation to the historical specificity of the basic features of society at large. Institutionalized forms of social order and control are thus "neutralized" through a reified apprehension of a certain empirical reality, the stability or immanent transformation of which seems to be taken for granted as far as the scientific methodology is concerned. Alternatively, the features of social control within the educational institution may be entirely disregarded through the apprehension of teaching as the mere steering of cognitive stimuli. In any case, the strategic issues of teaching are typically approached within a technological framework in which emphasis is placed on the possibilities of cognitive control of learning, while the "external" context of the social control of the learners is placed within brackets or played down by means of a sociological reification.

In the attempt to formulate nomothetic knowledge of the technical relationships between teaching and the cognitive control of learning, predominant research thus seems to rule out certain basic aspects of the social order as irrelevant to the teaching situation. To lay bare the "laws" of human learn-

ing as a "natural" phenomenon, specific stipulations have to be made concerning the social character of teaching. The assumption of an internal lawfulness of the teacher-student relationships may be seen to pertain to the feasibility of in principle final structures of social and cognitive control, insofar as certain forms of social interaction is supposed to result in certain objectified forms of cognitive control. Of course, this attempt spells behaviourism, and what is typically seen as cognitive control, inevitably an internal process relative to the learner, may be better referred to as social control in terms of the display of specific external responses. In this sense, the explicit concern within predominant research with the cognitive control of learning may be seen to involve the simultaneous - but implicit - concern with the social control of the learners within an institutional framework, which is basically taken for granted.

Hence, it seems that the technological aim of research on teaching is pursued by means of a scientific methodology in which conceptual reification may provide for a viable modus operandi. Social structure, and by implication knowledge and human cognition, is apprehended as a frozen "thing", governed by immutable invariances. The aim of explanation is pursued within a technological framework of an internal lawfulness of teaching and learning, and the main interest is focused on the necessary and sufficient operations needed to bring about predicted effects within this context. In so far as adequate generalizations may be feasible within the social framework taken for granted, research may thus provide practical information on how to steer educational processes in an efficient manner.

Then, how has research on teaching succeeded in providing such knowledge, which may serve as a basis for an efficient technology within actual teaching? Of course, answers to this question can be given from different points of departure, and these variations will influence the evaluative stands taken. For instance, it is possible to maintain that the technological conception of teaching has been a vast success and base this argument on considerations as to the prevalence of such conceptions in research as well as in major handbooks and textbooks in the field. Likewise, indications to this effect may be found in a perceived predominance of structural-functional and behaviourist modes of reasoning in the academic education in pedagogy, or in the vigorous efforts to implement programs like Performance Based Teacher Education in the US, and so on. On the other hand, however, an answer may be approached from the standpoint of pertinent theory and research itself, taking into consideration the criteria of scientific knowledge, which may be seen as relevant and important in this context. The various kinds of external "practicality criteria" may thus be possible to dis-

regard to some extent in favour of an appreciation of the quality of the actual scientific knowledge obtained. The basis of evaluation is then the extent to which the available knowledge meets the demands of scientific methodology as such, and to what extent contemporaneous technological theory may properly be seen as making certain practical recommendations feasible.

Such evaluations are frequently to be found in surveys and analyses of the state of research in various fields, and in the following we will take a look at some conclusions reached by distinguished researchers on teaching concerning major achievements. The purpose is thus to ascertain the results of research on teaching, as seen by researchers themselves, in order to picture how research has managed to fulfill the explicit aim of providing for "understanding, prediction and control" of the phenomena of teaching.

Wallen & Travers (1963), in their survey and analysis of teaching methods research in the first Handbook, examined the cumulative results of research on the relationships between teaching methods and learning outcome until the early 60's. Their general conclusion was that these studies have "little scientific significance" (op cit, p 466) and that "teaching methods do not seem to make much difference, or to phrase it more appropriately, there is hardly any direct evidence to favor one method over another" (op cit, p 484). In large measure, they ascribed the poor state of scientific knowledge in the field to the perceived lack of teaching methods research adequately based in scientific theories of learning.

Ten years later, in the editorial preface to the Second Handbook, Travers (1973) reported as a common reaction of contributing authors in relation to their tasks of reviewing the research literature within the different sub-fields, a "disappointment about the lack of substantive research" to the extent that in many cases, the authors could not bring the findings together "the complaint being that the research consisted of a patchwork of unrelated items that neither fitted together nor yielded a useful set of generalizations" (op cit, p vii). The editor found the disappointment of these contributors well grounded:

"Indeed, in looking over the collected chapters, one cannot help but be concerned about the lack of progress that has been made in relation to the large sums of money invested in the enterprise by the federal government... Those who participated in the first 'Handbook' would never have guessed that, a decade later, authors of the 'Second Handbook' would be having even greater difficulty in finding significant research to report than did their predecessors" (Travers, 1973, pp vii-viii).

Cronbach & Snow (1969) made an extensive study of research on learning outcome on the basis of various treatments. Although they found reasons for optimism as to the future development, their assessment of the current situation was not favourable. No systematic and consistent empirical evidence

could, in their view, be presented to affirm the view that learning outcome could be predicted on the basis of the character of the treatment.

Kliebard (1973), looking at the problem from the point of view of teacher education and regarding the issue of the constituents of "good" teaching as the question in that context, delivered a harsh criticism of the research efforts to define such teaching. He described what is called the scientific study of teaching as "in large measure, raw empiricism, a blind and almost necessarily futile grouping for statistically significant relationships", hampered by "the absence of analytical clarification of the concepts involved and the lack of a theoretical framework for the research" (op cit, p 20). His conclusions included the views that research manifested "persistent failures to isolate critical teacher behaviors" (op cit, p 15) and "an unbroken record of failure to answer the question of how to achieve educational aims most effectively" (op cit, p 18).

Rosenshine & Furst (1971) reviewed research on teacher performance criteria and differentiated between four areas of research; laboratory studies, subject matter research, experimental classroom studies and process-product research. The latter type of research concerns investigations in which observed teacher behaviours are related to student outcome measures, mainly by means of correlational studies. Focusing on this kind of research, the writers described five variables which appeared as the strongest findings of correlational relation between teacher activity and student achievement; clarity, variability, enthusiasm, task orientation and/or businesslike behaviour, and student opportunity to learn.

In relation to the last variable, student opportunity to learn, Rosenshine & Furst (op cit) found the correlations to student achievement to be positive, significant and consistent, and thus one implication for teacher education was said to be that "it is important to orient teachers toward cognitive classroom activities if we wish to enhance student cognitive growth" (op cit, p 48). This seems like good advise, but in the present context we may regard this kind of statement rather as an indication of the difficulty of reviewers in the field to establish more substantial propositions with regard to the knowledge obtained.

"Perhaps the beginning of wisdom in the study and improvement of teaching behavior is the confession of our lack of knowledge that can be applied with confidence to a teacher education program. Educational researchers have not provided those who train teachers with a repertoire of teaching skills which indicate to a teacher that if he increases behavior X and/or decreases behavior Y there will be a concomitant change in the cognitive or affective achievement of his students" (Rosenshine & Furst, 1971, p 40).

Good, Biddle & Brophy (1975) tried to demonstrate that "teachers make a difference". Discussing process-product research, they observed that although

it has mostly produced ambiguous or negative results, some variables of teaching seem significantly correlated to gains in student achievement and/or attitudes. The correlations were seen as weak, but their relevance as strengthened by the fact that they appeared with a certain consistency in different studies. Well designed experimental studies are, in their view, likely to yield positive results on the issue of process-product associations found in correlational studies like those reviewed by Rosenshine and Furst (1973).

The variables in that review were primarily those mentioned earlier (Rosenhine & Furst, 1971) and they included clarity; variability in teaching methods, curricula, and/or media; enthusiasm; task-oriented and/or businesslike behaviour; teacher criticism; teacher indirectness; student opportunity to learn; use of structuring comments; and multiple levels of questions or cognitive discourse.

Good et al (1975) contended that these variables, in addition to their support from research, have face-validity in that they correspond well to theoretical and common-sense expectations, and that they are likely to be intercorrelated.

"In short, they suggest that a teacher who is determined to teach the content that he is supposed to teach, who is well prepared and organized in his instructional behavior, who is enthusiastic and skilled in motivating students, and who encourages the students to become involved in an active way in the learning process is more likely to be successful than a teacher who lacks one or more of these characteristics" (Good, Biddle & Brophy, 1975, p 59).

Indeed, this suggestion certainly appears sound, at least within the framework of a technological model of teaching. As a conclusive statement, however, it amounts to little more than a truism. Also, in the present context we may take notice of the kind of student role which is implied in this sort of notions of the teacher's role.

Brophy & Good (1974), focusing upon classroom interaction research, attributed the poor state of the field to primarily two factors not satisfactorily accounted for; the need for criteria to judge appropriate teaching methods as to teaching situation, and the need for research on the interaction between the teacher and individual students. Exemplifying the first point, they contended that when the objective is the memorization of facts, drill exercises and tests would be appropriate activities while class discussions or essay assignments would not. The opposite would hold for an objective involving such things as analyzing and solving complex problems or developing creativity in writing. Another example is that a teaching technique that would be appropriate for secondary students might be inappropriate for early elementary students (op cit, pp 1-2). However, in the light

of the amount of research being reviewed, suggestions of this kind may indeed not look very impressive. But, of course, they have to be seen in relation to the general accomplishments of research in the field:

"Despite years of educational research, relatively few findings which can be usefully applied to the improvement of educational practice have been produced. This has been true even of classroom interaction analysis research, even though this area of investigation bears directly upon the teaching process" (Brophy & Good, 1974, p 1).

Some of the variables mentioned earlier appeared in a discussion by Gage (1972). Thus, four variables were found to be significantly correlated with outcome like student achievement and positive attitudes; teacher warmth, indirectness, cognitive organization and enthusiasm. The research basis of the last variable, enthusiasm, in Gage's (op cit) discussion was examined by Kliebard (1973) and found to be less than firm. Actually so much so, that all Kliebard (op cit, p 19) was inclined to believe was that it appears "that students are able to remember more of their dynamic lessons than they are of their boring lessons". In view of the character of summary formulations often found in reviews of research on teaching, we should perhaps point out that Kliebard at this point apparently intended to be ironic.

There is perhaps no need to extend this enumeration of evaluative views on the state of research and the availability of scientific knowledge pertaining to the possibility of predicting and controlling educational outcome on this basis. It seems to be generally agreed that the theoretical state of the field leaves a lot to be desired, that the knowledge obtained is meager or ambiguous in decisive respects, and that the amount of dependable information as to how to formulate effective educational policies and practices is in fact minuscule. Conclusions to this effect are plentiful in summary reviews, and the examples given could be supplemented by numerous similar viewpoints (cf Bellack, 1978; Ebel, 1969b; Heath & Nielson, 1974; Kallós, 1973, 1976; McNeil & Popham, 1973; Shulman, 1970; Turner, 1975).

Of course, the stands taken by researchers differ with regard to the questions of why the results are what they are and what to do about this condition. The most common suggestions seem to include abstract variations on the general themes of the quantity and quality of earlier research in the field and the need for "more research" and "better research" in the future. However, interesting as these often wavering opinions are, in terms of the "independent variables" to and remedies for the poor state of research, they may be left aside in the present context of a prime concern with the actual results obtained.

Thus, from the standpoint of the scientific potentials of technological control over the practices of teaching, we may conclude that the promise of

research as yet largely seems to remain a mere promise. Research on teaching does not seem to have provided a theoretical foundation from which viable propositions of effective teaching can be derived, and the explicit aim of research in this respect does not seem to have been fulfilled to any significant degree. In short, it seems that the promises of the technological conception of teaching, as expressed in the predominant paradigm of research on teaching, have by and large been broken.

Nevertheless, the technological ideals seem to persist as guiding interests of scientific knowledge in the field (cf Bellack, 1978; Clifford, 1973). The research efforts continue to be centered around the basic tenets of the predominant paradigm, apparently in order to eventually turn the technological conception into practical success and establish teaching as a scientifically effective activity. In Part III of this study, we will inquire further into the ideals and functions of the technology of research on teaching, and then we will have the opportunity to consider some pertinent aspects of reification in a wider context.

11. The Interpretive Function of Research on Teaching

In the preceding chapter, we reached the general conclusion that although researchers may obviously have disparate views on the actual accomplishments of research on specific aspects of teaching, in the main the results are seen to leave much to be desired. A general opinion seems to be that the theoretical basis is weak and underdeveloped, and that the results are especially meager when considered from the viewpoint of practicality. Hampered by shortcomings in its theoretical foundation, research thus seems to have only modestly carried through its technological function of providing knowledge to be practically applied in actual teaching. Yet the technological aim seems to continue to be held in high esteem among educationalists, and the efforts of research seem to keep focusing on the feasibility of controlling the practice of teaching by means of scientific technology.

The paradigmatic orientation seems to be such, as we have observed earlier from several points of departure, that a direct relation is assumed to hold true between scientific knowledge and practical application. Thus, it seems that the intended results are typically apprehended as immediately translatable into practical directives, in the sense that the practitioner, notably the teacher, is thought of as gaining a direct access to useful information as to efficient ways of teaching on the basis of theory and research. In this way, the practitioner is supposedly expected to take advantage of the scientific results in and by what may be seen as a direct application of a theoretical cause-effect model within her or his practical means-end model of teaching, and a rather unproblematical mergence of these models often seems to be taken for granted. The control of certain effects, obtained in research and explained as caused by certain acts of teaching, thus seems to be regarded as in methodological principle directly translatable back to the practice of teaching, in which the teacher is supposed to employ such acts as means to the end of such effects. Thus, the assumption that these models may actually coincide in this manner seems to constitute

a basic feature of the technological conception of teaching.

In this chapter, we will discuss some aspects of how this assumption may in fact contain some rather problematical implications. Attention will be directed to certain consequences of theory and research on teaching which may be implicitly presupposed by the technological conception to provide for a functional mediation between the two models of teaching mentioned above. Specifically, we will consider the distinctive meaning with which the aim of "understanding" is infused within research by virtue of its technological basis. In this context, the provision of a particular form of understanding central phenomena of teaching will be referred to as the interpretive function of research on teaching.

To clear the way for this discussion, however, we should perhaps first acknowledge that the term "interpretation" frequently appears in another context and in terms of a distinction, which may cause some confusion in the present case; the long and heated debate within the theory and philosophy of science on the issue of the social sciences' orientation towards "explanation" versus "understanding".

Explanation and understanding, Erklären and Verstehen, objective causality and subjective meaning, observation and participation, quantitative and qualitative research, technical and hermeneutical knowledge; these and other comparable pairs of watchwords are used in that context to indicate what is often seen as a profound separation between two major philosophical and methodological inclinations within the social sciences. The former concepts are associated with a predominant concern with the establishment of nomological knowledge of objectified phenomena, while the latter conventionally refer to a prime concern with the subjective meaning - imputed by the theorist or defined by the actors themselves - which may motivate the subject's action in the social world. Based in long distinguishing traditions, these philosophical and scientific outlooks are often considered irreconcilable and competing with each other as two distinct modes of social inquiry. Not uncommonly, the "normal paradigm" of social and behavioural research is taken to represent a preoccupation with the problem of "explanation" and subjected to criticism from the alternative position, referred to as Weberian Verstehen, interpretive sociology, phenomenology, hermeneutics, ethnomethodology, etc. In the context of education and pedagogy, this may be exemplified by the various stands taken and elaborated within the so-called "new" sociology of education (cf Young, 1971).

With specific reference to research on teaching, the topical argument is voiced by Bellack (1978) in terms of a competition between the "mainstream scientific ideology" and the "interpretive ideology" in the USA. The former,

which may also be seen as based in the paradigm under scrutiny in this study, is described by Bellack (op cit, p 1) as having achieved the "status of orthodoxy" in US research on teaching. Its basic characteristics are summarized as follows; a prime substantive concern with the problem of teacher effectiveness, a dominant methodological style patterned after the natural sciences, and the view that research results provide directives for teaching practice (op cit, p 4).

This "teacher effectiveness paradigm", with its emphasis on the causal relationships between process and product variables of teaching, has been stimulated historically, according to Bellack's view, by the demands from teachers, administrators, supervisors, and those responsible for the training of teachers, as they seek results translatable into practical prescriptions for the work in the classroom. The obvious appeal of this research paradigm thus being its promise of results directly applicable in actual teaching, it continues to dominate research as the most viable means of meeting such demands. Having observed these circumstances, however, Bellack (op cit, p 20) concludes that the expectations of results furnishing direct directives for teaching practice are not reasonable, and that the search for such rules may turn out to be a futile endeavour.

Instead, he argues, the "mainstream scientific ideology" may need to be complemented by the "interpretive ideology", since research of both kinds may be important to the understanding of the processes of the classroom. The latter research outlook is described as methodologically inclined towards a prime concern with the intentionality and subjective understanding of social actors, and as substantively focusing on the provision of understanding from the standpoints of teachers and students. By giving authentic accounts and "insight" as to the actual processes in the classroom, and thus guiding the actors in the interpretation of these processes, research within the "interpretive ideology" provides for an understanding, which may complement rather than compete with the cause-effect explanations within the "mainstream scientific ideology", Bellack concludes.

This view of the two "competing ideologies" within research on teaching, and the general background of the opposition between the orientations towards "explanation" versus "understanding", may serve as an entry to the following discussion. Two observations may be made at once in terms of the present discursive shorthand. Firstly, that the predominant research paradigm is firmly anchored in the tradition depicted by a concern with "explanation". Secondly and consequently, that when the aims of research on teaching within this paradigm are described as the provision of "understanding, prediction, and control", this "understanding" does not refer to the "inter-

pretive understanding" of verstehen, hermeneutics, phenomenology, etc. Hence, when speaking of an interpretive function of the research considered in this study, there is no intention of directing attention to some alternative paradigm, like the "interpretive ideology" discussed by Bellack (1978), or to engage in any normative arguments on these terms, e.g. to imply that the paradigm should redirect its interests in line with some other meta-theory. Instead, the descriptive orientation of this part of the study remains, and we will thus consider the ways in which the predominant paradigm may actually provide for a certain interpretive understanding of its main phenomena, notwithstanding its prime concern with technological explanation.

We will proceed from the consideration that the data of research on teaching, notably in terms of acts of teaching, are not mere movements in time and space, but they refer to phenomena bestowed with social meaning in the minds of the researcher as well as the participants in the subject matter of research. The phenomena of research on teaching are not just "out there", but they carry significance to both participants and observers, e.g. teachers and researchers on teaching, and this irrespective of the meta-theory of the observer in this respect. If research on teaching within the predominant paradigm is, as Bellack (1978) puts it, patterned after the natural sciences and for this or some other reason does not affirm this specificity of its data, this will hardly change their basic character in this respect. To use the terminological distinction observed earlier, "artificial" phenomena do not alter their character just because they might be called "natural" by the researcher. Facilitated perhaps in a situation in which the scientist may alternate between the positions of "object" and "subject" of inquiry, in the sense that most researchers on teaching are likely to have extensive experience of teaching themselves, this distinction is often confused within research on teaching, as we have observed earlier (cf chapter 9). However, when the interpretation by the subject is not explicitly taken into account, which is the typical case within the predominant paradigm, a particular form of interpretation may have to be implicitly taken for granted in order for the scientific results actually to be practically applicable.

That scientific results are seldom available in a form which allows for the immediate derivation of rules of action is a not unusual observation among both practitioners and theorists. The "lack of applicability" of research on education is an often voiced concern among teachers and policy-makers looking at such results for practical advice, and already Dewey (1929), for instance, argued that rather than furnishing rules of overt action, scientific findings may provide "intellectual instrumentalities" by

directing attention in observation and reflection to specific conditions and relationships.¹⁾

Kaplan (1964), maintaining a distinction between the "act meaning" of social activity to the actual actor and the "action meaning" of such activity to the scientist, observes that the behavioural researcher may make use of what might be called a "circle of interpretation", i.e. that "act meanings are inferred from actions and are then used in the explanation of the actions, or actions are construed from the acts and then used to explain the acts" (op cit, p 362). Correspondingly, the researcher on teaching may be seen as implicitly involved in a circle of interpretation, in which act and action meanings interact in terms of his interpretation of the teacher's definition of the situation and his own particular theoretical perspective.

Moreover, when interest is focused on the practicality of research results, it may be appropriate to extend these considerations to include also an "external circle of interpretation", pertaining to the interaction of "act meaning" and "action meaning" from the point of view of the practitioner, e.g. the teacher. Hence, in so far as the teacher is supposed to take advantage of research findings, it is reasonable to assume that the action meaning provided by research, e.g. in terms of technological explanation, will have to be interpreted in relation to his or her own corresponding act meaning. In short, an act of interpretation is required, on the part of the teacher, in order for the research results to have meaning in his or her specific situation.²⁾

The implicit stipulation of a direct correspondence between the theoretical cause-effect model and the practical means-end model cannot be sustained as a valid assumption unless act meaning and action meaning in principle coincide, and this may not be the case, as Kaplan (op cit, p 139) also observes and exemplifies. That such an immediate relationship is in fact taken for granted in much research on teaching, however, may be exemplified by taking a second look at how the aims of this research are apprehended by two prolific writers in the field.

Gage (1963, pp 96, 99) writes, in relation to the general aims of "understanding, prediction and control", that "we understand an event by relating it logically to others" and that "understanding in the light of theoretical formulation and explanation is in this view the central aim of science".

1) Kaplan's (1964, pp 356-357) discussion of the "instrumental function" of explanation may also be observed in this context.

2) Taking into consideration the "decision-oriented" (Cronbach & Suppes, 1969) character of much research on teaching, the significance of this "external circle of interpretation" may be further pronounced.

According to this view, a borderline seems to be drawn between understanding and explanation on the one hand, and prediction and control on the other. Understanding is taken to mean having a theory of the relationships between variables, but such a theory may not be a sufficient condition for prediction and control, although it is a necessary one from the scientific point of view. A theory thus provides for explanation and understanding, and it may under certain circumstances provide for prediction and control. In this view of research on teaching, however, the various intentions seem to coincide and the direct applicability of adequate explanations seems to be considered as largely self-evident. Consequently, the exceptions from the rule of a technological merge of the aims are exemplified by reference to natural events like earthquakes and volcanic eruptions.

Kerlinger (1970, p 11) makes this position even clearer when he writes that the scientist "understands" by means of "explanation" and "prediction". No distinction is made between understanding and explanation, and there is no discussion of any understanding apart from the one provided by scientific theory of the "relations between variables". At a later occasion, the assumed merge of understanding and explanation is made explicit in the following way.

"The words 'understand' and 'explain' have to be interpreted broadly. When we say we 'understand' a phenomenon, we mean that we know its characteristics - or at least some of them - what produces it and what its relations are with other phenomena. We mean that we try out to 'explain' the phenomenon" (Kerlinger, 1979, p 7).

The negligence in predominant research on teaching of the distinction between act meaning and action meaning, in the present sense, involves an attempt to achieve a degree of objectification of knowledge, and a reduction of all subjective understanding outside of the technological model, which may not be practically feasible. In effect, the effort to stipulate a form of understanding which equates technological explanation seems to be defied on its own terms. To make scientific discourse intelligible in the first place, the parties engaged in this process will have to share a certain framework of communication which cannot be rendered meaningful by this kind of technological explanation. As soon as, for instance, a certain text by Kerlinger is approached with the purpose of providing such an explanation of its theoretical content, we step out of the interpretive framework taken for granted and the mode of communication is fundamentally changed. Rather, scientific discourse, as other forms of human communication, requires a basic communal frame of reference, which may also make technological explanation intelligible. The traditional distinction between "explanation" and "understanding", and the discussion of these matters within the theory and

philosophy of science, may be observed in this context, therefore, since such considerations may point to the futility of the effort to equate human understanding with the technological explanation of objectified processes.

Apel (1977), for instance, contends by a "complementarity thesis" that understanding and explanation are distinctive forms of knowledge, which supplement and exclude each other as different interests or intentions of asking questions and that they cannot be reduced to each other. He argues that the social sciences, including the behavioural sciences, cannot restrict themselves to imposing and testing communication-free hypothetical regularities of their phenomena, but that these hypotheses concerning rules of behaviour must rest on an understanding, the validity of which could be proved by the participation of the scientist in that rule-game.

"This involves among other things that all knowledge of social science, in contradistinction to knowledge of natural science, is in a two-fold way mediated by language, or even in a two-fold way mediated by theories, once by the language-game and the theory of scientists and, besides that, by the language-game, and sometimes even by the theory, in the light of which the human subject-objects understand their own rule-following behavior. Hence the decisive achievement of cognition must in this case consist in the methodical bridging between the two language-games, or even theories, by communicative understanding to be tested, in principle, by communicative participation in supposed language-games" (Apel, 1977, p 441).

Even though the search for "objective causality" within the social sciences is not proposed to be substituted by inquiry aiming at "subjective meaning", certain forms of understanding may be considered as complementary, in observation and communication, to the pursuit of explanation. In this sense, the technological ambitions within research on teaching may permit and require a form of understanding, which is consonant with these ambitions, in order to render the scientific findings meaningful, whether inside or outside of the "scientific community".¹⁾

Polanyi's concept of tacit knowledge (e.g. Polanyi & Prosch, 1975) points to the significance of the relations between focal and subsidiary awareness in a way which is of interest here. Technological information, e.g. in terms of cause-effect explanation or if-then prediction, being in focal attention, may be seen as deriving its meaning from the relations to subsidiary knowledge, at various levels of awareness, of the total context of its application. The "scientific" knowledge may thus derive its meaning from a certain tacit understanding, and technological information may function as such only in relation to a subsidiary interpretation.

1) In general, social theory and research may in this sense play important parts in the "social construction of reality" (cf Berger & Luckmann, 1972).

Pedagogical knowledge of a technological kind, therefore, may be rendered practically meaningful through an act of interpretation in which the understanding of the total educational context serves as tacit knowledge. Consequently, research on teaching not only depends on such knowledge in its efforts to establish technological information, but also elaborates it continuously. Certain subsidiary phenomena may be incorporated in the analyses, at more or less implicit levels, as stipulations taken for granted. Thus, for instance, technological knowledge of the processes of learning may rely for its pedagogical meaning on specific assumptions as to the social relations of education at large. The tacit dimension may be constantly elaborated and made explicit in specific respects as a matter of course in the practice of research, but residues may nevertheless enter as functional requirements of any particular hypothesis, finding or theory within the area of inquiry.

On the basis of these considerations, we may suggest that research on teaching, explicitly concentrating on the provision of technological explanation, involves the implicit stipulation and promotion of a specific form of understanding the reality of teaching, "explanation" and "understanding" referring here to the usual meanings of these terms within the theory of science. Focused on the feasibility of explanation in terms of "objective causality", research on teaching thus pursues and presents its results within a paradigmatic framework, which permits and requires a particular "subjective meaning" attached to the practical apprehension of the phenomena of teaching. In short, research within the predominant paradigm does not only concern technological explanation of the practice of teaching, but also technological understanding of this practice.

Hence, the interpretive function of research on teaching pertains to the provision and reproduction of a conceptual and communicative frame of reference in which teaching is basically apprehended as a technological issue. If the question is raised whether teaching is actually a technological problem, suggested by Kliebard (1973) to be the question in the context of teacher education, the interpretive function of predominant research on teaching involves the definitive answering of this question in the affirmative. Teaching is indeed understood as a technological issue in this tradition of research.

Referring back to the discussion in chapter 9. we may acknowledge here the possibility that the technological interpretation of teaching may be an important constituent of the educational processes of transition. As far as the contributions by research to these processes are concerned, it thus seems as if the interpretive function may be prior in significant respects to the

explicitly technological function, considered in the previous chapter. In terms of the direct translation of research results into practical rules of action, research has demonstrated a degree of impotency, which may not provide for great significance and, furthermore, the possibilities in this respect are in any case subjected to external debate and administrative processing in which their relevance to implementation may be efficiently probed. The situation with regard to the interpretive function, however, may be quite different.

This function of theory and research is merely implied in the basic task of the predominant paradigm, and as such it is performed in more subtle ways. To a considerable extent corresponding to common modes of apprehending social problems in society at large, the interpretive function is seldom subjected to explicit evaluation, whether internally or externally to research. Instead, this technological way of understanding educational reality is often taken for granted as the scientifically efficient mode of analysis and discourse.

In chapter 9, we discussed how the technological model of predominant research on teaching seems to be characterized as to its scope and limits by a profound reification of certain central phenomena, primarily considered in this study in terms of epistemological and sociological relationships. Maintaining that reification thus serves as a basic methodological platform of paradigmatic research, we may raise the question of how the interpretive function relates to the educational processes of transition in this respect. It seems that a general hypothesis could be that a significant feature of the predominant paradigm is to be found in its maintenance and development of reified forms of understanding the phenomena of teaching and their transitional character. In the subsequent sections of this study, we will try to explore this hypothesis and in general turn to the complex issue of why such a mode of understanding the reality of education seems to penetrate the paradigm as a basic aspect of the scientific form of comprehension.

PART III. THE IDEOLOGY OF RESEARCH ON TEACHING

Summary

Up to this point in this study, we have approached the predominant paradigm of research on teaching basically from an internal point of departure, which is to say that the description has largely been carried out from the standpoint of the theory and methodology of science in use within the paradigm itself. In the pursuit of the descriptive reconstruction of the paradigm, a major emphasis has been placed upon its pedagogical sociology, while no specific sociological standpoint has been explicitly put forward as a theoretical position of this particular study. In the forthcoming analysis, however, such a position is taken and elaborated within the pursuit of what was called an "explanatory reconstruction" in the Introduction. Thus, in this part of the study, an attempt is made to provide an explanation of the distinguishing features of predominant research previously described on the basis of a particular sociological theory.

The relationship between this theory and the predominant pedagogical sociology may be conceived of in terms of a fundamental opposition, the basic character of which may be indicated by some considerations on the problem of reification. While the discussion of this problem in Part II may have involved certain conspicuous departures from the internal context of intra-paradigmatic deliberation, the explanatory reconstruction in the present part entails the definite transgression of certain lines of demarcation in this respect. Thus, while the opposition at issue has been implied throughout the description of predominant research, in the sense that the problem of reification may be raised in relation to each and every main feature, it comes to the fore in the present context.

In short, the theoretical turning-point with regard to the problem of reification may be stated as follows. We have tried to demonstrate that the predominant paradigm entertains a reified methodology, primarily discussed in this study in terms of pedagogical sociology. Within this methodology, social structure is apprehended as a "thing", governed by immutable invari-

ances making for the feasibility of the effort to formulate the internal lawfulness of teaching and learning. This basic aim has been observed on several occasions in the previous chapters (see the statements by different authors on e.g. pp 61, 62, 90, 106, 108). The implied theoretical and methodological stand amounts to reification, insofar as the sociological and epistemological relationships of teaching and learning are confined to a paradigmatic framework in which, simply put, the individual subject is apprehended as a product, but not as a producer of social structure and knowledge beyond the internal lawfulness. To supplement this basic posture, educational development is taken to concern the steering and control by external agencies, preferably in accordance with the scientific knowledge of such lawfulness.

Of course, the problem of reification may be raised within the predominant paradigm, but then typically in terms of mere technical issues, e.g. questions of validity and reliability, on the pretext of a stipulated internal autonomy of science. Within the explanatory reconstruction, however, the opposition to the predominant paradigm, with its modes of reification, involves the negation of such internal autonomy, or, better stated, the negation of the negation within the paradigm of its dependence upon the essential character of society. Instead, science and society are conceived of here as intrinsically related within the dialectics of their interdependencies. In this sense, scientific production, as social production, is considered as an intrinsic aspect of society at large, and the processes of reification, within science and society, are comprehended as basic elements of social reproduction within a sociological theory concerning the essential character of the prevailing social mode of production in general.

This is a basic tenet of the analysis pursued in this part of the study. Thus, the external context of explanation relates intrinsically to the internal context of description, and the internal conditions of scientific production are approached in terms of social reproduction. As stated in the Introduction, the presentation focuses on social reproduction, rather than social change, on account of the primary purpose of providing an explanation of the empirical appearance of the paradigm. In this context, the concept of ideology plays a crucial role in the attempt to theorize the implications of the appearance of a negation of the essential dependence of the predominant paradigm upon the prevailing mode of social production.

A general basis of inquiry is taken in the formulation of a Marxian theory of ideology. The exploration of the explanatory potentials of this particular framework implies that conceivable alternatives are not taken into explicit consideration, and the stand taken in this respect should thus

be made clear from the outset. Hence, rather than discussing such alternatives in abstract, the present inquiry tries to pursue a specific line of analysis as fruitfully as possible. This line, moreover, is not even the Marxian line of analysis, whatever that would mean, but specific choices are made also within this general framework. No particular tradition of Marxian scholarship is adhered to in the overall analysis, but references are made to such sources, which are seen as interestingly related to the topical issues under consideration. In other words, the Marxian basis of inquiry is eclectically reconstructed, since the prime concern of this study is with the scope and coherence of its own theoretical totality.

Pointing to the general significance of the relationships between science and ideology, the presentation takes its beginning in an overview of the history of the concept of ideology. Thus, in chapter 12, some aspects of the origin and development of this concept are recounted with an eye to certain important moments in its career within the social sciences. Also, some typical definitions of the concept in contemporary writings are observed as a background to the conception to be developed within this study.

Chapter 13 contains a short presentation of Marx' theory of ideology. Focusing on certain features of this complex theory which are of particular interest in the present context, the account pays specific attention to the essential concept of the fetishism of commodities. To stimulate also the further study of the original texts, certain well known passages are brought to bear on the issues at hand, and the interdependence of some crucial concepts is pointed out. Thus, intended to serve as an introduction to the Marxian tradition of analysis in relation to the problem of ideology, the presentation centers on a manner of interpreting important texts which is of particular pertinence to subsequent elaborations in this study.

In chapter 14, the concept of the capitalist state is introduced in the context of the theory of ideology. The main issue here is the possibility of theorizing how ideological consciousness is reproduced in relation to the social practices of institutional structures. A particular conception of state activity is adopted to the present concerns, and the ideological character of the state is approached in terms of the provision for efficiency and legitimation within the reproduction processes of the prevailing social formation. Building on the previous presentation of the concept of the fetishism of commodities, the discussion of the state also tries to outline a preliminary account of how state activity may be conceived of in terms of institutionalized forms of "commodification".

Against this background, the discussion in chapter 15 on the state functions of research on teaching returns to the topical issues of pedagogy and

education. The possibility of pursuing functional analysis in terms of the social organization of the research apparatus is pointed out, since this possibility may seem to lie close at hand, but mainly to clear the way for another approach. This approach, which is a most important feature of this entire study, involves the attempt to analyze research as a modality of ideological operation in terms of its own scientific methodology and the predominant theory of science as described earlier. On this basis, the state functions of research are discussed as a matter of reproducing the form of ideology within the theories and methods of research itself. Hence, having considered the general function of reproduction within schooling, this chapter reformulates the functions of research described in chapters 10 and 11 in terms of the state functions of technological efficiency and interpretive legitimation.

The form of ideology pursued by the practice of research within the predominant paradigm is then focalized in chapter 16. The crucial effort of this study to consider the internal scientific methodology as a form of ideological practice basically involves the attempt to demonstrate how the general features of ideology may function as a method of apprehending social problems in the context of research on teaching. The Marxian distinction between essence and appearance is applied to this context, and the ideological practice of the scientific study of appearances is discussed in relation to the earlier description of the methodology from an immanent point of departure (cf chapter 8). By considering this account and formulating the ideological features of research in terms of objectivism, neutralism and idealism, the analysis thus tries to elucidate how a research strategy turns into ideology by systematically appearing to deny the essential character of the central phenomena at issue. Acknowledging the dialectics of the practical strategy of research and the functions of efficiency and legitimation, this chapter thus concerns specifically how the scientific task is pursued as a matter of ideological functioning.

In chapter 17, some persistent features of research within the predominant paradigm are discussed from the explicit perspective of the topical theory of ideology. Certain phenomena observed in Part I are reconsidered from this standpoint, and particular attention is paid to the pertinent issue of the relationships between curricular and teaching methods research. Returning also to the project PIL, as an opportunity to exemplify ways of applying and developing the theory in concrete context, this chapter thus suggests certain possibilities of understanding some issues of central pedagogical interest.

The explicit emphasis of the study to this point has been placed upon the

formulation and use of a particular theory of ideological reproduction within the concerns with predominant research on teaching. In chapter 18, however, the issue of pedagogical change is raised to the surface of inquiry, and a discussion of the feasibility of paradigmatic transition is initiated. Certain contradictions of the predominant methodology are focused upon in an attempt to elucidate how a dialectical theory of change is in a sense implied in the explicit theory of reproduction. On this basis, the discussion considers the problem of a critical reconstruction of the pedagogical paradigm as a matter of the theoretical negation of the negation of scientific autonomy within the explanatory reconstruction.

Intended mainly to round off this study by presenting a few conclusions and preliminary points of entry to further analysis and debate, this last chapter may be seen as a sort of "forward-looking summary" of some basic aspects of the study in view of the needs and potentials of continued theoretical elaboration. As such, it has a tentative character and raises perhaps more questions with regard to emerging concerns than it tries to answer. It may also be added here that while the previous sections of Part III presuppose some general knowledge of basic Marxian concepts, the reading of the last chapter may be facilitated by some familiarity with the work of the first generation of critical theorists within the so-called Frankfurt School. Essentially, however, it is to be seen as an effort to stimulate the development of critical dialectical theory within pedagogy by presenting an approach to such a theory.

12. The Concept of Ideology

At the time of the French Revolution, the ideas of the Enlightenment and the modes of reasoning of rationalist philosophy were adopted by the rising bourgeoisie as a weapon against the political and religious dogmas of the ancien régime. In 1795, the rationalist philosopher Antoine Destutt de Tracy was given the formal leadership of the newly founded and, for a brief period of time, highly prestigious Institut de France. In a speech shortly afterwards he proposed a new science, a "science of ideas". He called this new science "idéologie", and its proponents were later to be called "idéologues"¹⁾. Founding their work primarily on the philosophies of Condillac and Locke, the ideologists basically set out to break with the old metaphysics in favour of the empirical analysis of the human mind and of how all ideas had their origin in human sensation (cf Aiken, 1956; Lichtheim, 1967).

Napoleon Bonaparte became a honorary member of the Institut in 1797. The liberal ideas of the ideologists had a vast influence over the educated middle class, a fact of which Bonaparte was well aware. At the time of his coup d'état de Brumaire in 1799, he could seek the support of the ideologists and take advantage of their prestige and importance for the formation of public opinion. Soon, however, the same ideas were to become a threat to his own position of power and he turned against the idéologues. After his reconciliation with the Church in 1801, and especially after the disaster in Russia in 1812, he totally changed his views on the ideologists and their ideas, attacking them for misleading the people and encouraging forms of democracy which they were not capable of exercising. In fact, he even blamed the ideologists for the total misfortunes of the country (cf Williams, 1976, p 126).

"It is to the doctrine of the ideologues - to this diffuse metaphysics, which in a contrived manner seeks to find the primary causes and on this foundation would erect the legislation of peoples, instead of adapting the

1) The word "ideology" appeared in English in 1796 (Williams, 1976, p 126).

laws to a knowledge of the human heart and of the lessons of history - to which one must attribute all the misfortunes which have befallen our beautiful France" (Napoleon I, in an address to the Conseil d'Etat in 1812).

So, the heyday of the ideologists came to a sudden end, and the very word "idéologue" took on a pejorative meaning. Removed from the pleasant position of being regarded as the defenders of free thought and scientific rigour, the ideologists had to see their significance for social and political development gradually vanish. Left in the general connotations of public vocabulary, however, was this pejorative meaning of ideology as something emotionally biased and socially unreliable, a notion which since has never deserted the language and the public use of the word.

The ideologists of the Institut have their importance in the history of science primarily as the forerunners of positivism. Psychological phenomena were to be studied experimentally, and the history of ideas and the human mind to be seen as a matter of natural evolution, as distinct from the realm of meta-physical speculation and religious illusion.

"But this 'materialist' theme is crossed by a normative purpose: the 'Science des idées' is to yield true knowledge of human nature, and therefore with the means of defining the general laws of sociability. The reduction of individual 'ideas' to generally held notions is intended to lay bare the common ground of human needs and aspirations, thus providing the lawgiver with the means of furthering the common good. What is 'natural' is also 'social'. Once human nature is properly understood, society will at last be able to arrange itself in a harmonious fashion" (Lichtheim, 1967, p 8).

In this ambition of social reformation on a scientific basis, which would later find an articulate position in the positivism of August Comte and others, the educational systems were to play an important part according to the ideologists. Prejudice and self-interest would eventually give way to the power of rationality, and the advancement of this enlightenment was seen as a task of national education. Notions of the potency of education in creating the good society were thus essential to the work of the Institut and to the faith of the idéologues.

This kind of idealism, according to which society will change once the proper ideas, e.g. as to human nature, are produced and distributed to the people, was a prime target of the critique of German speculative philosophy which Marx, in collaboration with Engels, came to pursue some fifty years after the inauguration of the Institut de France. Well aware of the work of the idéologues, Marx directed his efforts towards a penetrating criticism of Hegelian and Young-Hegelian philosophy, and the characterization of this philosophy as "ideological" marked the break with both idealism and early materialism. In what would later be published under the titles of the "Economic and Philosophical Manuscripts of 1844" and "The German Ideology", his general conception of history was worked out, and the character of political

economy was approached in term of the scientific apprehension of socio-historical modes of material production. In these endeavours, the concept of ideology played a vital part, and from there on it has continued its remarkable career within the tradition of Marxian scholarship.

The Marxian conception of ideology is vast and complex, and the term is used in several meanings also in the classical writings. In abstract, the place of ideology is "inverted" as compared with idealistic assumptions of the driving forces in social history, in the sense that any Marxian conception of ideology will have to recognize the relative dependence of ideological formations upon the economic structure of society. Whatever stipulations of more specific forms of interaction between ideological phenomena and the economical base that are made in concrete context, the idealist notion that class society is ruled by the will of its united individuals is definitely abandoned. Ideology, and its relations to concepts like alienation and reification, constitute essential ingredients in a system of theoretical propositions concerning how class societies in general, and capitalism in particular, form ideas, values and institutions, as well as human consciousness, on the basis of their specific modes of production. Since a Marxian conception of ideology will be presented shortly, it will suffice here to point to the intention of a fundamental break with idealist speculation in the dialectics of Karl Marx.

In the early decades of the present century, the construction of European sociology as an academic discipline was to a great extent taking place in opposition to Marxism, or as efforts to reconcile Marxism with positivism. Marxian concepts were taken over and redefined, the framework of class struggle was obscured in Durkheimian conceptions of society as a moral and sui generis reality or Weberian notions of the inevitability of the growth of "rationality", and so on. The concept of ideology was of particular interest to the sociologists and different ways were developed to handle the issue of an obvious existence of a social determination of thought and human consciousness. Gradually, Scheler's term "sociology of knowledge" (Wissenssoziologie) was adopted for this specific field of the sociological analysis of all kinds of public "knowledge".

The development of the sociology of knowledge is often associated with the name of Karl Mannheim. With him, a Marxist conception of ideology met with Weberian relativism to result in "relationism" and the alleged extension of Marxism to include not only the "opponent's" distorted views in the analysis, but to treat all leading ideas and representations of social reality as equally determined by their respective social origins.

"With the emergence of the general formulation of the total conception of ideology, the simple theory of ideology develops into the sociology of knowledge. What was once the intellectual armament of a party is transformed into a method of research in social and intellectual history generally. To begin with, a given social group discovers the 'situational determination' (Seinsgebundenheit) of its opponents' ideas. Subsequently the recognition of this fact is elaborated into an all-inclusive principle according to which the thought of every group is seen as arising out of its life conditions" (Mannheim, 1936, pp 77-78).

Mannheim distinguished between two concepts of ideology, besides the general meaning when the analyst "has the courage" to include his own views in the analysis, namely the particular and the total. The particular conception refers to the psychologically based interests that may distort some part of the opponent's assertions, while the total conception concerns the whole "Weltanschauung" of an age or a certain social group. The problem of the general notion of ideology is, of course, how scientific knowledge is at all possible when all positions, including the analyst's, are infected with the distortions of partial interests. Mannheim's answer was, in principle, that objectivity is a matter of the progressive accumulation of different positions into a "dynamic synthesis" and as the social bearers of this synthesis, he designated the "socially unattached intelligentia". This social stratum would, because of its relative "classlessness", have the capacity of transcending its own particular social position, according to his view.

If Mannheim has played an important role in the development of the sociology of knowledge, the contemporaneous work by Lukács has been of crucial significance to the advancement of Marxian theory of ideology. In his major work, "History and Class Consciousness", originally appearing before the publication of the early works of Marx which had such vitalizing effect on Marxian theorizing, he laid bare the processes of reification which systematically infuse working class consciousness with false notions of its place in history (Lukács, 1971).

The Hegelian framework, in which this work by Lukács was placed, was carried further by the theorists within the so-called Frankfurt School. Basically interested in the issue of the displacement of revolution in the West, these have contributed greatly to the Marxian analysis of ideology and in particular to the understanding of the relationship between science and ideology. Thus, the work by critical theorists like Horkheimer, Marcuse, Adorno, and later Wellmer and Habermas has been central to the analysis of positivist science in the context of capitalist transformation.

These fragments of the history of the concept of ideology mentioned above are all closely related to the popularized debate on the issue of ideology, insofar as they are often invoked to back up and legitimize the various stands being taken. That this interest in the phenomenon of ideology, how-

ever, may be based more in political than theoretical concerns is particularly obvious from a look at what is known as the "end of ideology debate".

The general issue at stake in this debate, reaching its height in the late 1950's and early 60's, was whether society, conceived of as "post-industrial", "technological", "democratic" etc, had any place for ideology, or if this phenomenon could only hinder the further progress of the West. Has ideology ever played an important part in the development of society? If so, what was this ideology? Should society develop according to some ideology? What are the changes in society doing to the phenomenon of ideology? In which kind of society has ideology no place? These were the kinds of questions that were asked and fought over in heated debates. Two books, both published in 1960, were central to this debate; Daniel Bell's "The End of Ideology" and Seymour Lipset's "Political Man".¹⁾ The main arguments of these books overlapped: Life in the Western democracies, particularly in the USA, had reached a stage in which ideologies could arouse little passion, social progress was based on consensus, and society developed according to the principles of well-established democracy. The ideological age was over, but there was still a need for utopian thought. This utopia, however, was not to be seen as a matter of faith in the Good Causes, but rather of having a realistic view on society, preferably based in empirical social science.

From there on, the debate largely focused on the disparate views on the significance of ideology, and the interested parties separated into two camps; one believing in the end of ideology thesis and being appalled by their opponents' unscientific disregard of the empirical facts, the other persistent in the view that the end of ideology thesis was just so much ideology.

In retrospect, the end of ideology thesis hardly seems substantiated, even in terms of the conceptions employed by its proponents, and certainly not when judged from the intensity of the debate itself.²⁾ The intellectuals may appear less "free-floating" than Mannheim apparently imagined, and less inclined to the kind of "objectivity" that the proponents of the thesis saw as indicative of its very correctness. Thus, intense as the debate no doubt was, its main consequences are probably better appreciated in a political context than as a contribution to the theory of ideology.

In contemporary theory and research within disciplines like sociology, psychology, and pedagogy, the concept of ideology is used extensively and in a variety of meanings. Indeed, the concept seems to be of central concern to

1) In Sweden, the debate was centered around Prof. Herbert Tingsten, who vigorously fought for his idea that the ideologies were "dead" (cf Tingsten, 1967).

2) For an overview of main contributions to the debate, see Waxman (1969).

inquiry into a number of basic issues within the social sciences at large. Yet it is often used in rather indeterminate ways, and explicit definitions frequently refer to descriptively vague contexts. Thus, it seems that a common denominator of most definitions is a reference to a "set of ideas, values, beliefs, etc" with a capacity of directing the functional relationships of social actors to their environment. That this "etc", however, may include a wide range of possibilities is amply demonstrated in the last example below. In general, the following definitions seem to represent major approaches to the problem.

"Psychologically an ideology is a system of beliefs about social issues, with strong effects in structuring thoughts, feelings and behaviour" (Brown, 1973, p 179).

"An ideology ... is a system of beliefs, held in common by the members of a collectivity, i.e., a society or a subcollectivity of one - including a movement deviant from the main culture of the society - a system of ideas which is oriented to the evaluative integration of the collectivity, by interpretation of the empirical nature of the collectivity and of the situation in which it is placed, the processes by which it has developed to its given state, the goals to which its members are collectively oriented, and their relation to the future course of events" (Parsons, 1951, p 349).

"We speak of an ideology when a certain idea serves a vested interest in society. Very frequently, though not always, ideologies systematically distort social reality in order to come out where it is functional for them to do so" (Berger, 1968, p 130).

"An ideology is any theory of society that tries (consciously or not) to defend existing social conditions and present them as legitimate by proposing explanations that in some sense appear scientific" (Israel, 1973, p 55; orig. in Swedish).

"Although the term 'ideology' has assumed a diversity of meanings, pejorative as well as descriptive, it generally refers to an integrated pattern of ideas, system of beliefs, or a 'group consciousness' which characterizes a social group. Such a pattern or system may include doctrines, ideals, slogans, symbols, and directions for social and political actions. Ideologies also include objectives, demands, judgements, norms, and justifications, and in this sense they are value-impregnated systems of thought which may be perceived as sacred.

Ideologies may be dogmatic or flexible. They may be supportive of the status quo or may include demands for a new social order or a radical alteration of the existing system...

Besides being characterized by rhetorical aspects which appeal to the emotions and which may be directed toward developing self-confidence or self-glorification, ideologies include elements which may be based upon faith as well as upon empirically tested assumptions or explanations...

Ideologies are products of collective life and serve, in part, as a 'language system' within a social group. Because they are the belief systems of a group, they do not depend upon any one individual for their survival. They exist because man is a social animal" (Eernier & Williams, 1973, pp 27-28).

This last example, taken from a treatise explicitly concerned with ideology and education, may be considered as illustrative of many attempts to come to grips with the problem of ideology in the context of the sociology of education. In its preoccupation with the various manifest contents of

ideological systems of thought, the approach also represents a common alternative to the one to be developed in this study, essentially concerned with ideology as an underlying form of social and mental processes and products.

Summing up this short overview of the development of the concept of ideology, there seem to be basically two opposing strands involved in theory and research on the phenomenon of ideology. One represents the idealist tradition, according to which ideologies are basically systems of distinguishing ideas, values, beliefs etc with the purpose of directing action in the social world. The other represents the Marxian tradition, in which ideological manifestations are apprehended as necessarily related to the material basis of social life and to the historical specificity of social modes of production. Furthermore, as far as the debate on ideology within the social sciences is concerned, it seems that the opposing strands also differ in their very definitions of science. In effect, a cleavage in intellectual positions is brought to light in the distinctive modes of apprehending the concept of ideology, and this cleavage, it could be argued, has such penetrating implications that it may well be an adequate point of entry to an analysis of social science in which the concept of paradigm could be fruitfully employed in terms of the structure of scientific revolutions (Kuhn, 1970). In any event, it seems that any attempt to treat ideology scientifically is constantly running the risk of being regarded as treating science ideologically.

13. Marx's Theory of Ideology

When, in the early 1840's, Marx embarked on his critique of Hegelian philosophy, he found a theoretical premise for the formulation of his theory of history in what he, some thirty years later, described as turning Hegel's dialectics "the right side up".¹⁾ Following and extending the criticism offered by Feuerbach and other Left-Hegelians, e.g. on the nature of religion in the idealism of Hegel, Marx identified the basis of man's alienation in the social reality of the material world rather than in the evolution of Spirit striving for fulfillment in the absolute knowledge of Mind. That the human essence, and the alienation from this essence, was to be apprehended in the history of social and material production became a leading notion when Marx turned to political economy, in order to further develop his analysis of the human condition in class societies in general and bourgeois society in particular. Already in what would later be published under the title of the Economic and Philosophic Manuscripts of 1844, the critique of Hegelian dialectics and then prevailing political economy builds from a conception of alienation which also has a definite bearing upon his emerging theory of ideology.²⁾

Working from an analysis of socio-human labour, Marx describes the character of alienation in relation to the process and product of labour, to nature and the sensuous external world, and to the worker himself and his relationship with other men. Due to the class relations of production and the private ownership and appropriation of the means and social surplus of production, the commodification of labour, the specific forms of the social division of labour, and other objective phenomena of this order, the worker is seen to become alienated from the means and ends of his labour, which takes on a hostile character towards nature and man's species being. Of par-

1) In the Afterword to the Second German Edition of Capital (Marx, 1967, p 20).

2) For book-length treatises of the concept of alienation, see e.g. Israel, 1971; Mészáros, 1970; Schacht, 1970.

ticular interest in this context is Marx's notion of the nature of man's species being (Gattungswesen) as the essential basis from which the worker becomes alienated.

"The animal is immediately identical with its life-activity. It does not distinguish itself from it. It is its life-activity. Man makes his life-activity itself the object of his will and of his consciousness. He has conscious life-activity. It is not a determination with which he directly merges. Conscious life-activity directly distinguishes man from animal life-activity. It is just because of this that he is a species being. Or it is only because he is a species being that he is a Conscious Being, i.e., that his own life is an object for him. Only because of that is his activity free activity. Estranged labour reverses this relationship, so that it is just because man is a conscious being that he makes his life-activity, his essential being, a mere means to his existence" (Marx, 1844 Manuscripts, 1972, p 62). 1)

Thus, alienated from the essence of free conscious activity, the worker is transformed in such a way that his species life becomes just a means to his physical subsistence. With this notion of the alien and hostile character of the worker's own physical and mental creation, Marx introduced a line of analysis which was to be further elaborated in The German Ideology and, although in a significantly modified form, throughout his later work. This analysis involved the effort to theorize the dialectics of being and consciousness, and to understand the specific forms of rupture and contradiction that appear in this unity in class societies.

When Marx, in collaboration with Engels, wrote The German Ideology in 1845-46, the main purpose was one of self-clarification and of settling accounts with post-Hegelian philosophy.²⁾ The conception of history set forth in the 1844 Manuscripts is considered in juxtaposition to what is called the ideological form of German speculative philosophy and the result is a rather detailed elaboration of the history of material production. In addition, the general character of ideological thought is described, yet if only in a rather crude and "immature" manner. The issue, then, is the problem of the relationship between human consciousness and how men "really are" in the productive mode of expressing themselves, and how this relationship is distorted in and by ideology. Thus, Marx subjects philosophical idealism to criticism from the standpoint of an analysis of social modes of material production.

"The premises from which we begin are not arbitrary ones, not dogmas, but real premises from which abstraction can only be made in the imagination. They are the real individuals, their activity and the material conditions

1) Throughout the remainder of the study, quotations from Marx's writings are, whenever feasible, drawn from a single source, the selection of texts edited by Tucker (1972).

2) See the Preface to A Contribution to the Critique of Political Economy (1976, p 5).

under which they live, both those which they find already existing and those produced by their activity. These premises can thus be verified in a purely empirical way" (Marx, *The German Ideology*, 1972, p 113).

In productive activity, individuals are seen to be entering into specific social relations that can be ascertained without any metaphysical speculation. The development of the productive forces corresponds in specific ways to the emergent social relations of production, and Marx describes the evolution of social formations from the tribal form of ownership to the bourgeois form of private property and how these structures relate to the nature of human consciousness.

"The production of ideas, of conceptions, of consciousness, is at first directly interwoven with the material activity and the material intercourse of men, the language of real life. Conceiving, thinking, the mental intercourse of men, appear at this stage as the direct efflux of their material behaviour. The same applies to mental production as expressed in the language of politics, laws, morality, religion, metaphysics, etc., of a people. Men are the producers of their conceptions, ideas, etc. - real, active men, as they are conditioned by a definite development of their productive forces and of the intercourse corresponding to these, up to its furthest form. Consciousness can never be anything else than conscious existence, and the existence of men in their actual life-process. If in all ideology men and their circumstances appear upside-down as in a camera obscura, this phenomenon arises just as much from their historical life-process as the inversion of objects on the retina does from their physical life-process" (Marx, *The German Ideology*, 1972, p 118).

In this famous passage, Marx succinctly states his early conception of ideology, insisting that human beings produce their own consciousness on the basis of their social mode of production. Consciousness cannot be apprehended as some autonomous process developing on its own, but as somehow "reflecting" social reality. At the same time, Marx maintains that ideological consciousness is an "inversion" of this reality; "phantoms" formed in the human brain and "echoes" of a life-process standing on its head. Thus, while all ideology lacks an independent history and develops in relation to material production, it nevertheless presents a distorted or inverted image of these processes. The metaphor of the camera obscura is used to indicate this double nature of ideology as something which, at the same time, gives an accurate reflection and an inverted distortion of social reality. Ideology copies reality but in a reversed manner according to this conception, which may be referred to as a "picture" or "mirror" view of ideology.

What Marx is driving at is that social reality can be comprehended as constituted by certain "layers" that stand in specific relations to each other and, more than a decade later, he summarized this notion in the following way.

"In the social production of their life, men enter into definite relations that are indispensable and independent of their will, relations of production which correspond to a definite stage of development of their productive

forces. The sum total of these relations of production constitutes the economic structure of society, the real foundation, on which rises a legal and political superstructure and to which correspond definite forms of social consciousness. The mode of production of material life conditions the social, political and intellectual life process in general. It is not the consciousness of men that determines their being, but, on the contrary, their social being that determines their consciousness" (Marx, 1859 Preface, 1972, p 4).

Thus, here Marx regards ideology as a "superstructural" phenomenon determined by the "economic base" and the conditions prevailing therein. However, at this point we are largely left in the dark as to the precise meaning of this determination. One might, for instance, get the impression that the economic structure develops apart from all consciousness, which clearly is an untenable position. Likewise, the possible conclusion that consciousness misinterprets reality in the reflection of the economic structure, itself void of all mystification, cannot reasonably be sustained as we will see later. The rather mechanistic account for the character of ideology offered by Marx in *The German Ideology* cannot provide for adequate explanations of such important aspects as in which sense capitalist production is conscious activity and how human beings are active in the construction of their own consciousness.¹⁾ Marx's early position is further specified in another well-known passage in *The German Ideology*:

"The ideas of the ruling class are in every epoch the ruling ideas: i.e., the class which is the ruling material force in society, is at the same time its ruling intellectual force. The class which has the means of material production at its disposal, has control at the same time over the means of mental production, so that thereby, generally speaking, the ideas of those who lack the means of mental production are subject to it. The ruling ideas are nothing more than the ideal expression of the dominant material relationships, the dominant material relationships grasped as ideas; hence of the relationships which make the one class the ruling one, therefore, the ideas of its dominance" (Marx, *The German Ideology*, 1972, pp 136-137).

Marx's understanding, at this point, seems to be that the ideological distortion of social reality is carried out by the intellectuals of the ruling class, i.e. "its active, conceptive ideologists, who make the perfecting of the illusion of the class about itself their chief source of livelihood" (op cit, p 137), and who consciously manipulate superstructural phenomena as a means of social control. Valid as this description may be, it leaves important aspects of the problem untouched. For one thing, apart from the difficulties already mentioned, it clearly over-estimates the conscious capacity of the active ideologists, subjected as they are, like everyone

1) Hence, while a subjectivist approach is of little interest in this study, structuralist reductions to the effect that "it is not the subject who deceives himself, but reality which deceives him" (Godelier, 1967, p 93) also disregard essential problems. A most stimulating discussion of some pertinent issues is presented by Lichtman (1975).

else, to the mystifications inherent to the prevailing mode of production.

What is needed to bring out the essential character of ideological consciousness is a reformulation of the theory of alienation as presented in the 1844 Manuscripts. This reformulation is carried through by Marx in Capital, and especially in the short chapter on the fetishism of commodities in the first volume. Marx changes his point of departure from human labour as such to the commodity form, and the essentialist anthropology of man's species being is played down in favour of an analysis of alienation and reification in terms of the historical specificity of different forms of domination and exploitation.¹⁾ And, as Marx demonstrates in detail, the specificity of the capitalist mode of production is buried in the form of the commodity.

"A commodity appears, at first sight, a very trivial thing, and easily understood. Its analysis shows that it is, in reality, a very queer thing, abounding in metaphysical subtleties and theological niceties. So far as it is a value in use, there is nothing mysterious about it, whether we consider it from the point of view that by its properties it is capable of satisfying human wants, or from the point that those properties are the product of human labour... But so soon as it steps forth as a commodity, it is changed into something transcendent" (Marx, Capital, 1972, pp 215-216).

Marx initiates his analysis of capitalist production at the level of the economic "cell-form" of the commodity itself. However, while the casual observer may find nothing strange about the common commodity, its analysis in Capital evolves into the very turning-point of political economy in terms of ideological and scientific forms of apprehending social reality.

"Whence, then, arises the enigmatical character of the product of labour, so soon as it assumes the form of commodities? Clearly from this form itself. The equality of all sorts of human labour is expressed objectively by their products all being equally values; the measure of the expenditure of labour-power by the duration of that expenditure, takes the form of the quantity of value of the products of labour; and finally, the mutual relations of the producers, within which the social character of their labour affirms itself, take the form of a social relation between the products" (op cit, p 216).

Marx works from an analysis of how, under capitalism, the use-values of objects in relation to particular subjects appear, through an act of reduction to human labour in the abstract, as commodities void of all subjective interest in the form of exchange-values on the market. Every single commodity, whether a torpedo or a toothbrush, stands in a quantitative relation to every other commodity and is thus readily available for exchange. What is common to all the commodities, in their capacity to act as such, is that "abstract universal labour" has been spent in their production. In his labour theory

1) Analyses of the positions taken by Marx in his early and later writings as to the problems of alienation and reification are plentiful; see e.g. Althusser, 1969; Geras, 1971; Israel, 1976; Lecgrande, 1977; Mészáros, 1970.

of value, Marx describes how the values of separate commodities are determined by the amount of such labour that is socially necessary for their production. What concerns us here, however, is specifically how, under the form of commodity production, the social relations between the producers become opaque in that they appear as a social relation between the commodities themselves.

"A commodity is therefore a mysterious thing, simply because in it the social character of men's labour appears to them as an objective character stamped upon the product of that labour; because the relation of the producers to the sum total of their own labour is presented to them as a social relation, existing not between themselves, but between the products of their labour. This is the reason why the products of labour become commodities, social things whose qualities are at the same time perceptible and imperceptible by the senses... There it is a definite social relation between men, that assumes, in their eyes, the fantastic form of a relation between things... This I call the Fetishism which attaches itself to the products of labour, so soon as they are produced as commodities, and which is therefore inseparable from the production of commodities" (op cit, pp 216-217).

Within the capitalist mode of production, characterized by the preponderance of its products in the form of commodities, the fetishist apprehension of these commodities becomes the dominant mode of understanding social reality. The products of labour become vested with illusive powers, and the commodities, notably capital and labour power, appear as autonomous from the specific form taken by the social relations of production. Thus, for instance, capital appears as an interest-bearing thing in itself, and labour power, with its price for the capitalist, appears as human labour in general, and as fully paid for by the wages. To illuminate the nature of the fetishism of commodities, Marx, as in the German Ideology metaphor of the camera obscura, makes use of an optical parallel and states that while in the act of seeing there is a physical relation between physical things, the situation with regard to commodity fetishism is quite different. Here, the value-relations between things qua commodities have no connection with their physical properties, but in order to establish an analogy we may consider the "mist-enveloped regions of the religious world" in which an autonomous deity is construed as the determinant of social life. The optical metaphor is not fully adequate, Marx points out here, because the thing perceived is a "fantastic" form, which does not correspond to its essential reality.

On the other hand, however, Marx maintains that the relations between the individuals appear, not as direct social relations, but as "what they really are, material relations between persons and social relations between things" (op cit, p 217; italics added). Thus, we have to acknowledge that the optical analogy, like the camera obscura metaphor, has in fact a certain adequacy attached to it inasmuch as social relationships really take the form of a relation between commodities. The conclusion, hence, is that the fet-

ishism is both realistic and unrealistic, both an adequate reflection and a distorted inversion. The appearances are no mere illusions, but they neither represent the essence of social reality. The fetishism validly reflects the appearances of the commodity form, but it does not comprehend the essential basis of capitalist society. Instead, the fetishized consciousness apprehends the social relationships within this form of production as emanating from the commodities themselves.

The enigmatic character of the commodity, as it appears within the fetishism, is based in the commodity form itself. The social character of the individual's labour only appears in the act of exchange, in which the object of production asserts itself as a social value in the abstract, regardless of its specific social utility. The relationship between individuals manifests itself, not on the basis of their needs and abilities, but on the basis of the relative value of their labour power and the products of their activity. Furthermore, the exchange-values have to be taken into account during the process of production itself, in accordance with the standards of exchangeability as "established social facts".

"The character of having value, when once impressed upon products, obtains fixity only by reason of their acting and re-acting upon each other as quantities of value. These quantities vary continually, independently of the will, foresight and action of the producers. To them, their own social action takes the form of the action of objects, which rule the producers instead of being ruled by them... And why? Because, in the midst of all the accidental and ever fluctuating exchange-relations between the products, the labour-time socially necessary for their production forcibly asserts itself like an over-riding law of Nature" (op cit, p 219).

The exchange-values fluctuate independent of the will of the producers, and once the ratios have attained a certain stability, they appear to result from the "nature" of the products. The reified character of social relations that appear in the fetishized conception is therefore valid to the extent that the relations are in fact regulated by alienated forces.

With the concept of the fetishism of commodities, the anthropological notion of alienation entertained by Marx in his early work loses in significance, and the phenomena of social domination and mystification are approached in terms of the historical specificity of different modes of production. The commodified character of capitalist relations of production becomes the crucial point of departure in the analysis of how their systematic opaqueness exercises its domination over all the agents in society, including the capitalist. While, for instance, production in the "European middle ages shrouded in darkness" relied upon personal dependence and open coercion, which rendered the form of domination transparent for both serf and lord, capitalist domination is disguised and concealed in the fetishism of com-

modities. That the process and product of production maintain control over the producers, rather than the other way around, will assert itself like an "over-riding law of Nature" so long as the material basis of ideological apprehension prevails.

"The religious reflex of the real world can, in any case, only then finally vanish, when the practical relations of every-day life offer to man none but perfectly intelligible and reasonable relations with regard to his fellowmen and to Nature" (op cit, p 223).

To summarize this short presentation of Marx's theory of ideology, as it has been brought forward here, we may observe the following circumstances. While major early works, notably the Paris Manuscripts and The German Ideology, seem to fail to do full justice to the subtle dialectics of the Theses on Feuerbach and approach the problem of ideology on the basis of rather crude assertions as to the relations between base and superstructure, the propositions offered in Capital are much more elaborate and profound. Whereas in the early manuscripts consciousness seems to be treated as largely a passive recipient of reflections from the economic structure and relations emanating from it, and ideology in general appears as dependent upon the distorted depictions by the active ideologists of the ruling class, the concept of the fetishism of commodities has quite another depth. The fetishized consciousness of commodity production relates intrinsically to the capitalist mode of production, and the active production of consciousness thus inheres to the very production of commodities within a social structure, which by a certain necessity presents itself as something else than what it essentially is.

The fetishized view of social reality is granted a partial insight. It does not develop haphazardly out of mere imagination but, on the contrary, it is a constitutive aspect of production within the commodity form. As such, its reified character corresponds in definite ways to the alienation of this form, and its insight tells a story about basic social processes. However, the fetishized consciousness is confined to the level of appearances, and it does not comprehend the essence of the social fabric. The fetishism is limited and distorted, and the character and functions of this distortion have to be traced to its origins in the commodity form itself. In general, the fundamental mystification of the fetishism pertains to the reduction of socio-historical possibility to capitalist necessity and to the apprehension of the commodity form as a "final fact" of the magnitude of "natural law". The fetishized consciousness implicitly affirms the alienation of the capitalist mode of production, but the essence of the commodity form appears to be denied through the lack of comprehension of the historical specificity of this form as a social relationship.

Hence, we may close this reconstruction of Marx's theory of ideology by suggesting the summary definition that ideology is a form of consciousness, which appears to deny the essence of the capitalist mode of production. This preliminary account of the central phenomenon of concern to the present study will serve as a point of departure in subsequent elaborations. In the next chapter, we will consider how the ideological form of consciousness may relate intrinsically to social activity within the capitalist state.

14. The Concept of the Capitalist State

Like any other social formation, capitalist society will have to provide for its own reproduction. In the production of the social means of subsistence, the conditions of further production must also be produced, and this imperative imposes certain specific requirements on the state in the particular formation of capitalism. The mode of production is characterized, according to Marxian theory, by basic contradictions, which constitute constant threats to the processes of reproduction. Thus, the social relations of production involve the existence of opposing social classes, basically defined in terms of capital and wage-labour, which have disparate interests vested in the processes of production. With the general principle of competition regulating the relationship between separate units of capital, moreover, the basic contradictions will manifest themselves in continuous conflicts and diverging tendencies in the pursuit of profitable capital accumulation. To cope with these contradictions, and to attempt to reconcile the appearance of destructive conflicts, the state will take on a mediating function and establish an institutional structure to secure the conditions of production, and particularly those which cannot be reproduced by competing units of capital. In this sense, the capitalist state will be approached here as essentially functional to the reproduction of certain basic premises of the capitalist social formation.¹⁾

In general, the efforts of the state may be seen as directed towards the two basic requirements of providing for the continuation of profitable capi-

1) To clarify the present point of departure, i.e. the function of reproduction, we may observe, firstly, that the variety of manifest state structures, e.g. in terms of national and regional institutions, is of minor importance and, secondly, that it does not contradict the basic stipulation that the ultimate processes of reproduction take place within production itself. Also, as indicated in the general introduction and further discussed in the last chapter, this focus of inquiry implies that the crucial issue of social change is not explicitly considered in the present discussion.

tal accumulation and for the legitimation of the mechanisms under which this takes place. In approaching these interrelated and often conflicting functions, the state will try to produce and maintain those conditions, which are efficiently related to the pursuit of capital accumulation in forms upon which sufficient social loyalty and support may be bestowed. Thereby, the state also sustains the processes of production, which are the sources of its own capacity to reproduce itself, e.g. in terms of fiscal resources (cf O'Connor, 1973).

Since certain social functions cannot be performed by competing units of capital, an agency outside and above these will have to be instituted and maintained in society. The production of certain conditions of production may yield no profit, or their reproduction within forms of competition may endanger other vital conditions, and so on (cf Altvater, 1973). Thus, the state will establish itself as an "ideal total capitalist", standing above individual concerns. Of particular significance here is the capability of the state to provide for the legitimation of the social relations of production by appearing as a fully autonomous agency pursuing communal interests.

That the state in capitalist society essentially serves the interest of the accumulation processes is a basic inference in Marxian analysis, although the specific interpretations of this functional relationship may vary between approaches depending upon their main concerns. These differences within Marxian theory are of minor importance in this context, however, and we will focus on a particular approach in view of the topical discussion of scientific research. Hence, the intention at this point is neither to present alternative approaches to the study of the state within sociology at large,¹⁾ nor to discuss the specific features of various approaches on a Marxian basis,²⁾ but the purpose is merely to direct attention to some pertinent aspects of state functioning in the context of the theoretical framework of this particular study. In so doing, we will initially draw on the general analysis presented by the German sociologist Claus Offe.

Approaching the state from the standpoint of how it is functionally related to the accumulation process of capital, Offe (1975a) makes use of four elements in order to define the capitalist state; "exclusion", i.e. that the state is itself in principle external to the accumulation process; "maintenance", i.e. that it is the mandate of the state to create and sustain

1) See, for instance, the discussion by Alford (1975) of elite, pluralist and class paradigms within the sociological study of the state.

2) See, as an example at this point, the presentation by Gold, Lo & Wright (1975) of instrumentalist, structuralist and Hegelian - Marxist theories of the state.

profitable conditions of accumulation; "dependency", i.e. that the state is itself dependent upon the presence and continuity of the accumulation process; and "legitimation", i.e. that

"... only if (and only as long as) the capitalist state manages, through a variety of institutional mechanisms, to convey the image of an organization of power that pursues common and general interests of society as a whole, allows equal access to power and is responsive to justified demands, the state can function in its specific relationship to accumulation. This is equivalent to saying that the state can only function as a capitalist state by appealing to symbols and sources of support that conceal its nature as a capitalist state; the existence of a capitalist state presupposes the systematic denial of its nature as a capitalist state" (Offe, 1975a, p 127).

From this definition of the capitalist state, Offe proceeds to an analysis of state activity in terms of policy formation and implementation, based on a distinction between "allocative" and "productive" modes of operation. The method employed in allocation is that the state uses its authority, manifest in the legal and political realms, to create and maintain an environment of favourable accumulation by means that are already "state property", e.g. fiscal resources. Productive state activity, on the other hand, means that certain measures have to be taken, that are not already available to the state, in order to restore the process of accumulation or avoid perceived threats to this process. The state appears as the only possible agency of such activity under specific conditions, and the state thus has to provide for a certain input in the production process which is not secured by the forces of the market. In this way, the state may produce needed education, technologies, health services, transportation, housing and so on.

In contributing to the reproduction of the economic structure, and by implication of itself, the state has to produce and implement policies that create and maintain those conditions, in terms of productive forces and the social relations of production, that guarantee the further profitable production of commodities. As the state, however, is excluded in principle from the accumulation process and the criteria of the market, the production of effective or efficient policies cannot be easily assured. While, as Offe argues, the bureaucratic mode of operation, conceived of in its Weberian ideal-typical form, may be sufficient and best suited to handle the allocative responsibilities of the state, since the resolution of these is a rather routinized business, this is not the case with regard to productive state activities. These, instead, presuppose the output of specific results rather than the mere conformity with established rules and procedures. The possible alternatives to the bureaucratic mode of operation, Offe further argues, seem to pertain to either a purposive-rational model or a model based in democratic conflict and consensus.

As to the latter of these modes of operation, the "consensus" model, it involves a number of dilemmas which certainly do not speak for its fruitful application.

"Such a model of decision making, at least in its pure form, would mean that not only the logical and institutional distinction between politics and administration, but also the basic distinction between state and society, becomes negated: The authority to organize and decide upon productive state activity would reside in its clientele. The difficulties that such a loss of differentiation would entail for the ability of the state to function as a capitalist state are rather obvious. First, the permanent interference of conflict of interest and the dynamics of consensus formation into administrative action would probably make it incapable of planning and long-term action. Second, even if the time horizons of demands and planning would coincide, it remains highly questionable whether a policy process that is directly dependent upon democratic pressures could any longer converge in a policy that is consistent with the functions of the state that are required in a capitalist society" (Offe, 1975a, pp 139-140).

The adoption of this model of policy formation would thus create such strain and conflict within the system that this theoretical possibility cannot be practically applied, since the demands and interests being articulated cannot be satisfied within the basic capitalist framework. In our present context, however, the model, or rather its viable derivations within a particular state apparatus, can be seen as interestingly related to the form of ideology. The formal aspects of the model are often employed in the legitimation of substantially different modes of operation, and expectations are raised that cannot possibly be fulfilled within the imperatives of the existing parameters. Thus, the apparatus may be caught up in a "legitimation crisis" (Habermas, 1975) and in the conflicts between the necessity of legitimation and the manifestation of unsuccessful efforts to fend off the various symptoms of its erosion. We will return to this issue in chapters 17 and 18.

With regard to the third possible alternative of state action in relation to its productive policies, the purposive-rational, Offe is likewise unable to affirm its feasibility as a logic-in-use within the capitalist state. The reason is that this mode of operation presupposes the possibility of taking the goals of the activity for granted, thus to establish a rationale of defining efficient means to reach these goals. Within industrial commodity production, such goals are directly determined by the forces of the market, but the adequate ends of state activity cannot be that easily settled. Thus the criteria of effective or efficient instrumental rationality within the state do not appear objectively available, since the environment external to the state is of a contradictory character and since the state is unable to impose its own criteria on this environment.

The fundamental problem of the state, that Offe focuses upon, is how a

balance or reciprocity can be established between the internal structure of the state, as this structure relates to policy formation, and the external functions the state is called upon to perform. Which kind of internal structure may provide for the production of policies that may adequately fulfil the external functions related to the accumulation process? According to Offe, there are no structures of decision-making, in terms of productive policies, that can actually do the job. Hence, the state is involved in a constant struggle with contradictory tendencies, and the state may consequently appear as a highly precarious entity.

In another article, Offe (1975b) further elaborates on the contradictions between legitimacy and efficiency as they pertain to state activity. Defining a contradiction in this context as the tendency inherent to a specific mode of production to destroy those very preconditions on which its existence depends, he first puts the question of how anything at all could exist in historical reality that manifests such a tendency. To resolve this apparent paradox, certain assumptions are made; first, that the contradictions of the capitalist mode of production are not uniform during its historical development but that they become larger and more pervasive as accumulation proceeds, and second, that the concept of contradiction does not imply any automatic "break-down" or "crisis" but that the potentials of change may, at least temporarily, be kept under control by the system itself.

However, to what extent is the state actually capable of satisfying its functions of providing for efficient and legitimate forms of capitalist reproduction? In the article mentioned, Offe attends to this question on the basis of the following considerations. Legitimation is conceived of in line with the Weberian notion of legal-rational authority, as this is seen as the dominant type in the social formation in question. Effectiveness is seen as a measure of the ability of an organization to achieve its stated goals, while efficiency refers to the marginal gains in terms of input and output. Now the issue arises as to the possibilities of the state to establish and implement working criteria of effectiveness and efficiency that may also function in terms of legitimacy.

At this point, Offe maintains that the state encounters definite difficulties, inasmuch as the state activities do not relate to the criteria of market relationships and profit in any unambiguous way.

"The goal that inspires the capitalist state and its detailed operation is not a substantive one and cannot be justified as a substantive one. That is to say, the capitalist state is not oriented towards doing anything efficiently or effectively (because there is no way to determine whether efficiency or effectiveness has actually been advanced through any measure or program) but it is oriented towards putting private actors in a position to increase their efficiency and effectiveness according to the criteria of private exchange and accumulation" (Offe, 1975b, p 250).

Thus, the state is seen to command no internal criteria of effectiveness and efficiency but its success has to be measured against the degree to which it is capable of reproducing the commodity form, i.e. of creating and maintaining the adequate status of private units of labour and capital in the accumulation process. Such efforts of the state to universalize the commodity form means, according to Offe, basically two things; first, to place every owner of labour power in a position that makes it possible for him or her to find employment in the labour market in accordance with prevailing criteria of profitability and, second, to place units of capital or capital as a whole in a position in which it appears profitable to buy such labour power. The reconciliation of efficiency and legitimacy, according to Offe's analysis, can only be brought about if the legitimating rules are reinforced by the material outcome of state programs and if these programs are "efficient" in the way outlined above. This definition of a state of balance is then used as a basis of exploring the contradictions between the two functions.

The functioning of the state in relation to the commodity form has of course to be seen in the light of prevailing standards of legitimacy. The universalization of this form is obviously - taking an actual situation of vast unemployment into account - not fully carried through and thus the empirical status of this function is ambiguous. Although Offe does not really attend to this issue, it is reasonable to assume that this function of efficient universalization has to be seen as contradicted by the function of legitimation, i.e. that the legitimation of the commodity form itself limits the possibility of universalization. Thus, a certain surplus population in this respect may have to be maintained, not only in terms of business cycles and the restructuring of capital, but also in terms of the hierarchical ordering of the labour force and the legitimating effects of the social construction of deviance. The functions of efficient and legitimate universalization of the commodity form therefore have to be apprehended in the totality of their interrelationships.

Having now described certain features of state policy formation through a summary of some basic theses of the argument offered by Offe (1975a, b), we will proceed to a particular extension of the present analysis. Although the analysis by Offe is highly illuminating within the framework of its own premises, it fails to consider explicitly a most important feature of the state's, and indeed of capitalist society's, mode of legitimating its essential processes. This feature concerns state activity as a mode of functioning by ideology and furthermore of functioning by a faculty of ideology which has been described in chapter 13 as its very quintessence.

We may consider the basic hypothesis that the functioning of the state in capitalist society depends on the actual appearance of such conditions, which seem to negate its capitalist character and to affirm its "communal" or "neutral" nature. That the state thus appears as an entity outside and above the various interest groups in society is conventionally referred to as a matter of the "relative autonomy" of the state. And while it is clear that the functioning of the state presupposes a certain independence from the influence by specific units of capital and short-range interests of capital as a whole, the crucial issue in the present context concerns the sense in which the state is relative to the mode of production and the accumulation process. Here, we will attempt to understand this relation as a matter of a functioning by ideology.

Offe (1975a) defines, as we have observed, the function of legitimation in terms of the systematic denial of the capitalist character of the state, and in doing so he also hints at the possibility of a "reformulation of the Marxian concept of ideology" (op cit, p 127). This possible reformulation, however, does not seem to have an immediate capacity to advance our theory of ideology in relation to the concept of the capitalist state. The general reason is that while it is recognized that the problem of legitimacy is "caught in the dialectic of form and content", the acceptance of legitimating rules is only deemed possible if they are actually or prospectively "reinforced by the material outcomes of governmental measures and policies" (1975b, pp 249, 252).

In our reading, this approach may imply a reduction of the category of ideology in line with the conception employed by Marx in his early works, e.g. The German Ideology, in so far as legitimacy seems to be dealt with primarily as a matter of the explicit denial of capitalist relations by the active ideologists within the state and as a matter of ideology appearing as a simple reflection of the economic base. However, the very concept of productive policies, as used by Offe (1975a), may be seen to imply the affirmation of the inadequacy of such a theory of ideology, inasmuch as state intervention is not just a reaction to empirical conditions of production. Instead, productive policies have to be comprehended as appearing in a form in which the reproduction of the commodity form is intrinsically legitimated, while apologetic denial of this form is primarily to be understood as arising out of the symptoms of a legitimation crisis, the empirical reality of which cannot be taken for granted even in advanced capitalist societies. To explicate how state legitimation is not just a matter of the denial of capitalist relations of domination and exploitation through the administrative distribution of material and symbolical benefits, we will have to enquire further

into the character of state activity as ideology.

Althusser (1972) - like e.g. Poulantzas (1969) - discusses the reproduction of the capitalist mode of production in terms of the functioning of "ideological state apparatuses". A general point in this well-known article is of particular interest to the present analysis, namely the observation that ideology has a "material" existence. Thus, pursuing the argument from the point of view of the individual subject, Althusser states that

"... his ideas are his material actions inserted into material practices governed by material rituals which are themselves defined by the material ideological apparatus from which derive the ideas of that subject" (Althusser, 1972, p 269).

Leaving the invocations as to the significance of the word "material" aside, we may agree that what is at stake is the form of ideology as it manifests itself in the institutional reality of the apparatuses. The notion of the "spiritual" existence of "ideological ideas" may on this basis be circumscribed by the comprehension of ideology as inherent in the institutional practices within the apparatuses. Maintaining a dialectical view of being and consciousness, we will thus have to recognize the manifestations of ideology in and by the institutional practices of state functioning.

To apprehend state activity as ideological, we will suggest that the conception of ideology brought forward in chapter 13 may be adopted to a framework of analysis in which such ideological practice can be discussed without the reduction of this category to a mere reflection of commodity relations in the economic structure. In order to demonstrate this, we will try to picture the reality of "fetishized practice", and we will proceed from the following statement.

"The specific economic form, in which unpaid surplus-labour is pumped out of the direct producers, determines the relationship of rulers and ruled, as it grows directly out of production itself and, in turn, reacts upon it as a determining element. Upon this, however, is founded the entire formation of the economic community which grows out of the production relation themselves, thereby simultaneously its specific political form. It is always the direct relationship of the owners of the conditions of production to the direct producers ... which reveals the innermost secret, the hidden basis of the entire social structure, and with it the political form of the relation of sovereignty and dependence, in short, the corresponding form of the state" (Marx, Capital III, 1974, p 791).

This statement has its significance in the present context primarily because here Marx, in our reading, affirms that it is the commodity form of capital and labour which contains the "innermost secret, the hidden basis" of the entire social structure so that the fetishism of commodities, as an intrinsic aspect of this form, constitutes an inherent element of the capitalist state.¹⁾ The state develops with the transformation of class relations,

1) See, in this context, the thought-provoking analysis by Lichtman (1975) on the relationships between social activity and consciousness.

and its functions in terms of the reproduction of the basic features of these relations are necessarily also a matter of reproducing the fetishism, i.e. the ideological form of apprehending social reality. The state "corresponds" to the class character of production through the form of the fetishism of commodities.

On the basis of the proposition that the fetishism of commodities is inherent in the functioning of the capitalist state, it follows that the state is somehow involved in processes of "commodification" in terms of such institutionalized forms of activity which sustain and reproduce the fetishism. Certainly, the state produces material conditions of production (infrastructure) in which the general market criteria of the commodity form are employed, although in fiscal exemption from the marketplace, and in which ideological conceptions may be readily reproduced. However, state activity in the areas of, say, schooling, welfare, mass-media, etc does not primarily involve the production of an economic outcome, at least not in a direct manner, and this kind of state activity must consequently be understood in other terms in relation to the question of ideology. The reproduction of the basic fetishism, we will thus suggest, cannot be understood as simply and exclusively determined by the direct production of capital within the commodity form.¹⁾

Within the present theoretical framework, the hypothesis that state activity relates functionally to the reproduction of the fetishism of commodities will have to be based in an analysis of how the "commodified" character of institutional practice manifests itself. It is not sufficient to claim that ideology has a "material" basis in the rituals of the apparatuses, but we will have to consider how state activity is in fact comprehensible in terms of ideological forms of social reproduction. Thus, we have to consider how social practice within the state is ideological in the very sense of reproducing the fetishism.

To explicate this matter sufficiently within the framework of the present study, we do not have to introduce any new categories. In effect, the analysis by Offe (1975a, b) referred to above contains the specific point of departure, which will allow for the extension of its implied notion of ideology. This point of departure is present in the concept of the universalization of the commodity form.

We may argue that activity within ideological state apparatuses is fetishized activity for the very reason implied by the function of the universal-

1) The real status of the state's "exclusion" from the accumulation process is thus problematical. Some related issues, particularly in terms of the promotion of legitimacy, are discussed by Offe (1973).

ization of the commodity form of private units of capital and labour power. State activity is ideological in its form of reproduction and this essentially in the sense of formally "materializing" fetishistic modes of apprehending social reality. The structure of the basic state function, hence, is fetishism in practice and this has important consequences in terms of the concept of ideology to be employed in the forthcoming analysis of state activity.

In general, the state function of the "ideologization" of practice implies that the problem of legitimation can be understood as a matter of reproducing the mystification, which is inherent in the commodity form, through the explication in practice of the fetishism. The apologetic character of de-commodified notions of state activity, as in manifestos of policy, and the anticipated and actual material benefits resulting from state intervention, are thus phenomena which are only intelligible as sustaining legitimacy in so far as the basic mystification of the fetishism prevails within the activities of the state as within the economic relations of production.¹⁾ Conversely, these activities and relations are only plausible in so far as they reproduce the fetishism of commodities. The form and content of the legitimating rules of state activity are thus caught up in a dialectical framework in the very profound sense that their reproduction relates intrinsically to their own mystification in the course of their execution in practice. This means that the reproduction of ideology within the state is apprehended as inherently related to the reproduction of alienated activities - the rituals and abstract roles of "everyday life" - which implicitly sustain their own "neutral" and "objective" nature. In other words, in this sense ideology is a form of social practice, which appears to deny its essential capitalist character.²⁾

These short reflections on the character of state functioning, and in particular the considerations as to the relations between different modes of legitimation, will serve as a general background to the following discussions in the specific contexts of education and pedagogy.

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- 1) Thus, the basic ideological distortion functions to conceal the essential social structure behind the phenomenal facts of social relations: "This phenomenal form, which makes the actual relation invisible, and, indeed, shows the direct opposite of that relation, forms the basis of all the juridical notions of both labourer and capitalist, of all the mystifications of the capitalist mode of production, of all its illusions as to liberty, of all the apologetic shifts of the vulgar economist" (Marx, Capital I, 1967, p 540).
 - 2) This definition of ideology may be considered in relation to the one presented in chapter 13. A dialectical theory thus attempts to comprehend the concrete totality of the intrinsic relationships between social practice and human consciousness.

15. The State Functions of Research on Teaching

On the basis of the previous discussion of the state in terms of social reproduction, we will in the present chapter consider the ways in which schooling and research on teaching may participate in the processes of such reproduction. In particular, we will discuss the state functions of research within the context of social reproduction in schooling. Thus, we will explore the hypothesis that research on teaching within the predominant paradigm is functionally related to the maintenance and development of the prevailing mode of production.

As far as schooling is concerned, the reproduction of the conditions of production is primarily to be seen as a matter of reproducing labour power as a constituent of the productive forces of society. This is a dual process; on the one hand, children have to learn the specific "technical" skills and types of knowledge, which pertain to the adequate performance of jobs and roles within the division of social activity and, on the other hand, they have to adopt the kind of "dispositions" and normative inclinations, which are ultimately defined by the social relations of production.¹⁾ These two aspects of the reproduction of labour power, however, are intertwined and have to be comprehended in their unity.

Labour power as a productive force cannot, but in analytical abstraction, be separated from the social relations of production. The technical qualifications of activity in the hierarchy of work are reproduced intrinsically to this formative structure, and it is in this context that the normative dispositions towards social activity in general, pursued in and by schooling, derive their significance. It is, as Althusser (1972, p 246) puts it, in the forms and under the forms of ideological subjection that provision is made for the reproduction of the knowledge and skills of labour power. In the

1) The concept of habitus, as presented by Bourdieu & Passeron (1977), may be observed in this context.

following, we will initiate the analysis of the state functions of research by a few considerations on schooling in terms of how labour power may be seen as reproduced within the form of ideology in this context.¹⁾

It seems that schooling as a state apparatus has increasingly become a major agency of the reproduction of the labour force. Job training within directly productive sectors, in terms of the extraction of surplus-value, has lost in significance in favour of "socialized" schooling within the state. Althusser (1972), for instance, goes as far as asserting that the educational ideological apparatus has succeeded the Church as the dominant ideological state apparatus. Some of the reasons behind this process of transferring the efforts of labour power qualification from capital units to the state are discussed by Altvater (1973) in terms of the reproduction efficiency of capital. The crucial importance of schooling in advanced capitalism in relation to the problems of legitimation is affirmed by Habermas (1975).

It also seems that the growing importance of state intervention in the area of elementary schooling is intimately related to developments in the character of labour power qualification; from having a major basis in the reproduction of relatively simple qualifications clearly related to the specificity of occupational hierarchies to the reproduction of qualifications that are more abstractly based in the nature of capitalist relations of production. The general growth of labour power organized within the state (cf Offe, 1973) and particular phenomena like the "deskilling" of the labour force (cf Braverman, 1974), the tendency to accelerate the rate of capital reproduction by "innovations" and marketing of ever "new" commodities in order to fend off the symptoms of saturated markets and limits to productivity gains (cf Gorz, 1978), and other such phenomena taking place in the midst of vast educational expansion, may thus be taken as closely related to an increasingly important function of schooling to provide for the legitimation of the prevailing mode of production. In any event, it has to be observed that although no rigid split can be made between labour power as a productive

1) Actually, the effort to preclude any discussion of the class relations of production, and other social relations emanating from these, through the uncritical equation of the "technical" division of labour with social structure as such, is a major instance of the fetishism which constantly attaches itself to the processes of educational "commodification". The reified qualifications required from labour power within the hierarchy of occupations are apprehended as "merely" technical and neutral to any and all social formations due to their own inherent powers. The qualifications are seen as fully autonomous in relation to the social formation of capitalism and the knowledge, skills, etc are thus fetishized within the general idealist formula of "knowledge is power".

force, entering each productive unit in the money form of variable capital, and as inherent in the totality of class relations, an analytical separation is doubtless important to the comprehension of schooling in terms of capitalist transformation. This issue will be further discussed in the last chapter.

To reiterate some of the arguments in the previous chapter, we maintain that the reproductive efforts of the state basically concern the universalization of the commodity form of capital and labour in ways which appear profitable and legitimate. Consequently, we assume that schooling within the state will have to adopt its policies and practices to this end within its sector, i.e. to optimize the possibilities of each student to take part in the market of educational exchange values. At a general level, we argue in agreement with Offe (1975b), this involves the dual process of placing owners of labour power in a position to find employment in the labour market, and units of capital or capital as a whole in the position in which it appears profitable to employ such labour power.

Qualifying labour power in order to reproduce the conditions of capitalist production means, we will now infer, essentially one thing; the recreation and maintenance of labour power as a commodity. Whatever specific skills and types of knowledge are required from the labour force, the mode of their reproduction in schooling may be seen as determined by the functional imperative to maintain the commodity form of labour within the social relations of production. In this sense, therefore, the qualification process of schooling equals "educational commodification".

To explore this specific hypothesis, i.e. that schooling within the capitalist state is in general geared towards the reproduction of the commodity form of labour, we will consider the possibilities of the concept of an "educational commodity". The general meaning of labour power as an economic commodity is, of course, well known since Marx's labour theory of value and the elaborations in Capital¹⁾, but "commodification" within the state, as in schooling, is no doubt quite another issue, lacking in analysis and involving a number of theoretical complications, not only in terms of the labour theory of value and related propositions but also in relation to the very concept of the capitalist state. It should be clear, therefore, that the use of the term "commodification" to refer to the qualification processes of schooling remains provisional and to a certain extent merely heuristical.²⁾

1) See also the early lectures on wage labour and capital (1972, pp 167-190).

2) Although we should perhaps do so, we will not place the terms "commodity" and "commodification" within inverted commas in the educational context.

Educational commodification, we will propose, is the essential content of schooling within the capitalist state and it is carried out in the form of ideology. This basic inference from our emerging theory of ideology thus implies that the fetishism of commodities, as described in chapter 13, may provide a certain "rationale" of commodification in schooling, in so far as the state is capable, in its formation and implementation of policies, of maintaining an adequate operationalization of the ideological mode of functioning. We have noted that the fundamental aspect of ideology is to be found in the dual process of commodity fetishism of apprehending social reality in a way which is both correct and false, both a valid reflection of alienated commodity relations and a distorted inversion of their historical specificity into inevitable "laws of nature". This form, we now contend, is also the form of educational commodification.

The reproduction of the fetishism involves the reification of social relations and the "socialization" of things as two moments of the same totality. Commodities, and notably capital and labour power, do in fact take on the character of social relationships. They are actually socialized, but the critical move of the fetishism is to bestow "eternal validity" upon these facts through the act of reification. Correspondingly, educational commodification builds on the reproduction of this dual process; the qualification process of labour power affirms the fact of capitalist relations of production, and this is a valid reflection of alienation in the economic structure. However, the facts of this order are treated as indispensable conditions of production transcending capitalist relations, and this is a reified distortion serving the function of reproduction. Thus, the ideological form of educational commodification embraces the two efforts of reifying socio-human qualifications and socializing these things, the dialectical unity of which constitutes the basic function of reproduction within schooling.

This abstract content of educational reproduction entails the placing of two major tasks before the apparatus of schooling; the definition of the manifest form and content of educational commodification, and the subsequent distribution of these commodities to the future owners of labour power thus qualified, i.e. the students. Educational objectives and methods of transmission have to be established and programs of implementation must be adopted to approach the particular functions of the apparatus in terms of efficiency and legitimation. This process, in its turn, involves two interrelated aspects; the reproduction of the commodity form of labour in general and the selective distribution of specified qualifications within this form. Not only are the qualifications framed in hierarchies, but they are generally and regardless of their hierarchical positions framed in the form of educa-

tional commodities.

Defining the educational commodities, as a task of state policy-making, is primarily a matter of correctly ascertaining the evolving character of the exchange values of various units of labour power.¹⁾ This means, in effect, the adequate assessment of the distributive facts of alienation, i.e. the selective character of specific labour power commodities. In so far as the state policies of schooling correctly reflect the division of labour, efficiency can be pursued and thus, as far as reproduction is concerned, the facts of alienated labour must enter successful policies and implemented practices of schooling. Furthermore, the apprehension of the facts of commodified labour has to be coupled with a legitimized reification of the social basis of these things. Thus, adequate reproductive policies and practices of schooling will have to reflect the social facts of alienated labour, and attempt to re-socialize the commodity form within the confinement of the educational structure. In this general manner, educational commodification reproduces the form of ideology inherent in the economic structure of commodity production.

We may observe how the ideological form of educational commodification described above manifests a structural correspondence with the general state functions of efficiency and legitimation. The operationalization of the manifest form and content of schooling involves the definition and distribution of qualifications within the commodity form, and the pursuit of efficiency and legitimacy in these respects is thus to be seen a matter of a functioning by ideology.

Then, what is effectiveness and efficiency in the context of schooling? As we have noted in relation to the analysis by Offe (1975a, b), since the prototypical criteria of capitalist functioning, i.e. profit and accumulation, cannot be immediately employed in the activities of the state, a particular logic must be instituted to "translate" these criteria into this context. On the basis of the hypothesis that the predominant state function of schooling concerns the universalization of the commodity form, thus to make it possible for the students to sell their labour power on the market of "equivalent" exchange, a definition of schooling effectiveness can be approached. Schooling is effective in so far as established objectives are being met and in so far as these objectives correspond to the reproduction processes of capital accumulation. The criterion of effectiveness within

1) Although not explicitly dealt with in this context, the important issue of the feasibility of enforcing extra-market values in this process may be considered, in terms of the politics of educational change, throughout this discussion.

schooling is hence related to the saleability and profitability of the qualifications of the schooled labour power. It is the reproductive task of state policy-making to bring forth such objectives, given the conditions of legitimation, and an intricate political struggle is to be expected in this process.

Efficiency within schooling is a matter of the relative gains in the productivity of various programs designed to bring about specific ends in terms of effective qualifications. Again, with the lack of clear-cut criteria, this issue is not easily settled, as the tradition of research bears ample witness (cf chapter 2). The educational objectives typically constitute a complex conglomerate, and efficiency in one respect is likely to be counter-acted by inefficiency in another. The features of effective commodification are likely to be multifold and hard to pinpoint in any particular case of policy-making. Likewise, the side-effects of any definition of effectiveness are not easily ascertained, taking into account the changing environment of schooling, also in terms of the maintenance of legitimacy.

From an analytical point of view, the state functions of efficiency and legitimation present themselves as particularly complex in a sector like education. On the one hand, the apparatus of schooling must carry out its tasks in ways which satisfy internal criteria of efficiency and legitimacy, e.g. within certain fiscal constraints and accepted morale. On the other hand, its very tasks concern efficiency and legitimation in terms of the reproduction of the prevailing mode of production. Thus, the apparatus of schooling has to pursue its external functions of efficiency and legitimation in a manner which is itself constrained by criteria of efficiency and legitimacy.

Moreover, the situation is complicated by the possibility that, in the context of schooling, nothing may be more efficient than legitimation. Exempt from the market, but yet with the function to provide for the reproduction of the commodity form, schooling has to commodify in a "de-commodified" way, and in this process explicit or implicit legitimation of the commodity form may turn out to be a most efficient educational qualification. This, again, is to say that educational commodification is not just a matter of distributing certain indirectly productive technical qualifications, but these processes take place within the form of ideology and, hence, legitimation of the commodity form becomes ingredient in the educational commodity as such.

This is especially clear in view of the circumstance that knowledge and skills do not qualify as commodities in the same "natural" way as physical objects - or human beings. Culturally, a tradition of "non-commodified" knowledge is available in a number of forms, ranging from "common sense" to

"wisdom", and the commodity knowledge may no doubt be susceptible to constant threats from critical modes of comprehension. While the lack of the pseudo-natural criteria of efficiency prevailing in the economy may turn policy-making on schooling into an arena of political battle in which ever more extravagant and appealing notions of the de-commodified aims of education may be launched as persuasive arguments, this circumstance may also provide a possibility of passing beyond the mystifications of the various manifest ideologies in order to question the basic commodity form. Thus, the commodification of knowledge may be taken as a highly precarious process, vulnerable to political and philosophical conflict, and the promotion of efficiency in this process will have to be seen as necessarily related to the feasibility of various rules of legitimation.

In general, it seems that policy-making within the liberal state relies on rules of legitimation, which are based on promises of and actual redistribution of the surplus of production. The extended reproduction of the essential conditions of production is, so it seems, secured mainly through the system of distribution of the material outcome of production and the power of consumption. Thus, these essential conditions are sustained by their legitimation as the guarantee of further expansion in the area of private appropriation and redistribution of the social surplus.

In this sense, ideological manifestos typically focus on the actual and desirable character of the social mode of surplus distribution. For instance, educational policies often seek legitimation by referring to the promotion of personal careers and the pursuit of high status occupations within the established social division of labour. However, in their concentration to the explicit form and content of programs of schooling and training, as means to such ends, the policies seldom make reference to the processes through which the basic function of reproduction is pursued. The implicit form of commodification is rather typically taken for granted as a basis of efficiency and legitimation. In the present context, the explicit rules of legitimation in terms of the anticipated and actual redistribution and private appropriation of the social surplus will have to be considered in relation to the implicit legitimation of the commodified form of educational transmission. In effect, we may maintain that it is only with the precondition of the ideological apprehension of the "natural" character of educational commodification that these explicit modes of legitimation may actually function as such.

As discussed in the previous chapter, Offe (1975a) argues that the basic forms of decision rules according to which state policy-making can operate seem to be limited to three, i.e. the cases of bureaucracy, purposive action

and democratic conflict and consensus. None of these principal modes of internal structuring can be shown, however, to provide adequately for the functions of the capitalist state, and Offe is thus forced to conclude that the state remains in a constant struggle of attempting to reconcile its functions with its mode of operation. In particular, he contends that in so far as the intervention by the advanced capitalist state in the reproduction process of capital is defined by the need for productive state activities - as compared with mere allocative - even the most realistic method of policy formation, the one implied by the purposive-rational or technocratic model, is afflicted with a number of disadvantages. Only under very limited and unlikely conditions, and among these the possibility of clear-cut, uncontroversial and operational goals, a considerable stability of the environment and/or short production cycles, ignorable side-effects and no fiscal constraints, is Offe (op cit, p 139) inclined to affirm the viability of this model. Nevertheless, assuming that the capitalist state is in fact in existence, its functions are somehow executed, however inadequately and filled with contradictions. It is in this light - the necessity to cope with ambiguities and apparent dilemmas - that the character of the state research apparatus may be fruitfully approached.

Hence, it is in this complex context of providing for efficient and legitimate educational commodification that we will now place the state research apparatus. Dising the arguments on the hypothesis (which may be corroborated empirically by concrete analysis of a number of indicators in the realm of policy-making), that policy formation within the sector of schooling has been increasingly and decisively characterized by productive efforts, in the present sense, we will consider the necessity of expanding the range of "purposive action" as a basic point of departure to the analysis of this apparatus. In short, we will explore the hypothesis that the internal structuring of the research apparatus is adapted to this very end of providing for efficiency and legitimacy in terms of the policies and practices of educational commodification.

The functional task bestowed upon state agencies will require a mode of operation in which political, bureaucratic and professional manifestations may be adequately incorporated. State activity involves a reciprocal process of structuring, in which the internal mode of operation takes part in both the definition of and the resolution to the issues that appear on the agenda. Thus, the form and content of state activity are instituted in a framework in which concrete possibilities of policy-making and implementation interact with their functional requisites and outcome. In this context the capacity of the research apparatus may be seen as closely related to the structural

character of its ideological autonomy.

Several options of points of departure are available for the analysis of the social activity of research in this respect, the most obvious perhaps being the institutional organization of research. Thus, although we proceed here from a functional definition of the state, and hence state research, we may take the opportunity to observe that while institutional arrangements vary between countries, the bulk of research considered here is carried out under the more or less direct auspices of the state administration, e.g. at university departments. Research is commissioned and sponsored by state agencies, and the institution of research, including the training of researchers, forms an integral part of the state apparatus. In Sweden, educational research is most definitely institutionalized in this way. A highly centralized system, dominant research is sponsored by a small number of agencies, primarily the National Board of Education, and carried out as projects under the leadership of university professors and other high-ranking academic officials. As mentioned in chapter 3, much Swedish research on schooling has been initiated, performed, and reported in close liaison with various branches of the state administration. It is, for instance, generally acknowledged that research within this pattern has played an important role in the development of policies on the comprehensive school during the last decades. Notwithstanding various kinds of conflict, a pattern of smooth functioning has been established, and it seems that the case of Sweden may provide a good example of how the advanced capitalist state may organize research as an integrated apparatus.¹⁾

However, while the internal structure of the state research apparatus may be rather clear-cut in organizational terms, and readily available for an inquiry of the present kind, this line of analysis will not be pursued in the present context. Instead, research will be considered as a mode of state operation in terms of its own scientific methodology. Thus, we will try to approach the issue of the internal structuring of research in relation to its state functions as a matter of theoretical deliberation and methodological practice. This is to say that while we may acknowledge the dependence of the particular research methodology also upon the social division of labour, its mode of operation will be considered in terms of its own logic of scientific inquiry.

The methodology of research on teaching has been described in Part II, and its ideological mode of operation will be discussed in the next chapter.

1) The self-understanding provided by research of these structures is sparsely documented, apart from ideological accounts. See, however, Kallós & Lundgren (1976) for a more critical discussion.

The reason for raising the issue of internal structuring here is that the form of the scientific research under consideration should be kept in mind in the analysis of functional relationships within the state, because, we suggest, there is a structural correspondence between the methodology of research, the mode of policy-making, and the practices of teaching pursued within the state.

The structural correspondence thus assumed to exist between the various forms of state activity serves, in the present analysis, as a framework for the study of the optimal conditions for the pursuance of the functions of the capitalist state. However, the most important issue concerning the deviations from this assumed harmony, i.e. the contradictions and conflicts involved in these activities of the state, will largely be left in suspense in this context.

Theoretically, we may proceed here from the hypothesis that the internal structuring of research is such that its state functions are to be advanced, and any paradigmatic feature of the methodology of research will thus have to be considered from this point of view. Moreover, the mode of research operation within the state will, on the basis of its methodological premises, develop and further specify the manifest content of these functions, i.e. the issues which may appear on the state research agenda with sufficient plausibility of being adequately resolved. Hence, state research will have to be comprehended within a dialectical framework of form and content.

Therefore, we should, in view of the later discussion of the ideological practice of research, consider the specific meaning with which the functions of efficiency and legitimation are infused, by virtue of their definition by the features of the methodology described in preceding parts of this study. In other words, which kinds of efficiency and legitimation are promoted by the research on teaching with which we are concerned?

We have observed how this research, within the division of intellectual labour of curricular and teaching methods research, is centered on the issues of what and how to teach in school. The two general aims may be described as the formulation of "socialized" educational objectives, and the establishment of firm information of how learning is effected by various means of teaching. The efforts are directed towards the construction of an operative technology of teaching, and the theoretical and practical character of research on teaching has been elaborated in these terms in Part II.

Furthermore, we have discussed such research with regard to the provision of a particular form of interpretive understanding of the phenomena of teaching. As a more or less implicit aim of paradigmatic research, this consequence is typically described as a means of theory formation within the internal

functioning of science, but it has nevertheless been ascribed a wider significance in chapter 11. While the technological function explicitly relates to the feasibility of external control of educational practice, the interpretive function concerns the control defined and exercised by the actors themselves on the basis of their understanding of the nature of their tasks.

Now we argue that these functions - the technological and the interpretive - correspond structurally to the general functions of the state, i.e. efficiency and legitimation or, put in another way, that the technological and interpretative functions of research define its state functions. In and by the pursuit of these functions, predominant research contributes in a certain way to the general processes of educational commodification. The implications of these contributions by research may vary depending on the foci on ends or means, objectives or methods of teaching, on the degree of relevance to policy-making and actual teaching, etc, but we will maintain that they do, in any case, concern the reciprocal relationships between the functions.

The technological function of research on teaching entails two aspects; the definition of "effective" educational objectives and the definition of "efficient" methods of transmission. As such, the technological function explicitly concerns the reproduction of externalized facts referring to the division of social activity, and to the viability of external control of the processes of reproduction. The interpretive function, on the other hand, concerns the ideologization of the predominant theories of teaching, regardless of the particular qualifications to be pursued, and it may be understood as a manifestation of the general mystification inherent to the form of ideology. It is in this general sense, we suggest, that the two functions concern technological efficiency and interpretive legitimation within the context of teaching and learning, and the contradictory character of research on teaching will have to be comprehended in this light.

Research and theory on teaching, centered on the issues of what and how to teach, intervene in different ways in policy-making as well as in actual teaching, e.g. through teacher education, and we will focus here on the interrelated forms of these activities within the state. Our concern is with the form of research and theory-making in its relation to policy-making and practices of teaching.

The definition of educational objectives, as a matter of establishing the manifest substance of educational commodification, concerns the study of the division of labour and other activity based in the relations of production. The reproduction of the commodity form of labour by means of schooling is, as far as the objectives are concerned, delegated to research as primarily

a matter of providing for the qualification of the hierarchically structured labour force. Thus, the objectives will have to take on a form which somehow correspond to the commodity form of labour within the structure of work. This general form, we propose, is maintained in the curricular research under consideration through the reification of educational knowledge.

This form is the prime device of securing the commodity form of educational content and it is, within research on the "socialized" curriculum, coupled with the reification of social structure as a basis of defining the objectives. Thus, while reified educational knowledge may appear in several manifest forms,¹⁾ the one focused upon here pertains to the reification of social relationships within the structure of work and social institutions in general.

The efficiency of different pedagogies in terms of the marginal effectiveness of various methods of teaching appears as a matter of the different ways of achieving reified objectives and this may be seen as the main focus of research on teaching methods. While the effective functioning of the educational system at large is a matter of the societal criteria of substantive outcome, and thus a concern of curricular research, the efficiency of schooling in satisfying these criteria is a matter of the internal functioning of schooling and thus of prime concern to research on teaching methods. The point of departure of this research is that, given the effective objectives of schooling, methods of teaching may vary in efficiency in the pursuit of such objectives.

While the prime methodological move of ideological curricular research is to reify the manifest content of learning, ideological research on teaching methods, we propose, is generally directed towards the reification of educational forms of interaction, i.e. the reification of educational roles. The mechanisms involved in this effort have been exemplified in chapter 9.1, and the methodological features will be further specified in the following chapter. Here, we may only take notice of the fact that the function of educational efficiency, as promoted through the various moves of conceptual reification, is pursued within a framework which allows for the re-socialization of the educational commodities in accordance with the hierarchical structure of work, and for the educational reconstruction of individual differences.

The functional relationships of legitimation involved in research are complex. Distinctions may be made between internal and external legitimation, and between the various external agencies and internal foci of attention. In

1) One appearance is related to the "structure of the disciplines".

this context, we will just point to the possible differences between "scientific", "bureaucratic" or "political", and "professional" forms of explicit legitimation as these relate to the activities of researchers, policy-makers and teachers. Also, there may be varieties within these, due to their internal structuring, and differences as to types of implicit legitimation, in terms of "practical" consciousness, within and between these agencies.

In general, however, the state research function of legitimation concerns the feasibility of reified control over the processes of teaching and learning, either external or internal, technological or interpretive. In other words, the reification of educational knowledge and roles entertained by research on teaching must be deemed legitimate.

Internally, the prime source of legitimation may be found in the capacity of reified theory to provide for "strong" theory in terms of explanation and prediction. In so far as reified conceptions validly correspond to actual educational processes, technological explanation and reproductive invariance are theoretically feasible. Apart from the affirmation of reification that grows out of the practical conditions of research, i.e. the alienated character of the ideological state apparatus, in terms of ideological consciousness on the part of researchers themselves, certain reified theories may no doubt "work" in the technological sense under specified and limited conditions, and their reified character is thereby internally validated. Thus, there are some grounds for the assumption that the legitimating rules of scientific methodology may adequately provide for the internal reproduction of reified notions of efficiency. On the other hand, dissatisfaction with "positivism" and "behaviourism" has been voiced with greater intensity during the last decades of educational research and the legitimating rules of reification are by no means unchallenged. The implications of these tendencies in relation to the ideological autonomy of the research apparatus, however, are still to be ascertained.

Externally, the prime source of legitimation seems to pertain to the alleged "objectivity" and "neutrality" of scientific efficiency. This "objectivity", which is firmly bound up with reified conceptions, implies that the likely losses in legitimacy are those that relate to experiences of ivory-tower-research and fancy-theory-ideas, while the ideological character of the methodology itself may still not be questioned to any significant degree.

Thus, ideological research may legitimize educational commodification in the manifest manner of providing for efficiency within, and apologies for, the logic implied by the reproduction of the commodity form. We will maintain, however, that the more profound rules of legitimation have to be ap-

proached in terms of the form of ideology itself and the basic mystification involved in the fetishism of commodities. This is the locus of the correspondence between research methodology, policy formation and teaching practice; and it is mainly in the "scientific explication" of the form of ideology that research on teaching contributes to the reproduction of educational commodification and thus of the social relations of production. The more concrete character of this "explication" of ideology in the pursuit of the state functions of efficiency and legitimation will be the concern of the following chapter on the ideological practice of research.

16. The Ideological Practice of Research on Teaching

In the preceding chapter, we discussed how research on teaching may be apprehended in relation to the general function of the state to provide for the reproduction of certain basic conditions of production in society at large. Thus, so far we have approached research primarily from a functional or systems-theoretical perspective, which may illuminate some important aspects of the problem at hand but which also has certain shortcomings. In fact, we have criticized this kind of theorizing throughout this study for the general reason that, in focusing basically on the appearing consequences of the external relations between separate units of interaction, it tends to disregard the crucial issue of how social reproduction, and to be sure social change, is comprehensible in terms of the actual pursuance of particular forms of practical activity. The functionalist slant of the earlier analysis was counteracted to some extent by the affirmation of the reciprocity of the form and content of state research, but even so, the possibility of a functionalist deviation in these matters should be further restrained and that will be one task of the forthcoming analysis.

The functional mode of explanation may be regarded as a standard procedure of academic sociology, although already Durkheim (1966, p 90) pointed out that "to show how a fact is useful is not to explain how it originated or why it is what it is". Such explanations are likewise far from uncommon in analyses on a Marxist basis, not least in the field of the sociology of education, and while no doubt other systems of interaction may be considered in this context, the mode of explanation remains largely the same from a methodological point of view. For instance, to maintain a rigid separation of the "base" and "superstructure" in the functional analysis of schooling may provide for a certain "realism" in the interpretation of empirical educational possibilities, but the methodological, and thus in a certain sense the ideological, features of such an analysis may differ little from its

"idealistic" counterpart.¹⁾

However, to elaborate on these methodological matters in general is beyond the scope of this presentation and we will proceed to the specific topic under consideration here; the ideological practice of research on teaching. In order to penetrate the abstract notion of ideological functioning within the state as a question of reproducing immanent conditions of production (even if extended reproduction), we will attempt to advance towards a wider understanding of the "totality" of ideology in science through an analysis of how research and theory formation is a practical issue.

If we, in the effort to understand ideology, in general are "advancing in still poorly explored domains" (Althusser, 1972, p 269), this is particularly so when we approach the issue from the standpoint of the dialectical unity of the opposites of form and content or theory and practice. Perhaps it would be useful to enter this domain through a short reflection on the concept of ideology.

Conventionally, as we have seen in chapter 12, the concept of ideology concerns the variety of systems of values, beliefs etc with certain functions in social intercourse, notably in terms of the direction of action. When, for instance, Bernier & Williams (1973) discuss the educational ideologies of scientism, romanticism, puritanism, nationalism, progressivism and educationism, they do so from the perspective of the varying manifest contents of these systems, but they do not recognize in any coherent manner the formal properties that may unify the systems as ideologies. The significant features of the ideologies are described as manifest in the various leading ideas, competing for influence within a pluralist framework. From a Marxian point of departure, however, such ideological manifestations, including the notion of pluralism, cannot simply be taken as they appear in empirical reality, but they all have to be considered in terms of the form of ideology in general.

In a sense, one distinguishing feature of the Marxian conception of ideology is present in the very concept of conception. In the conventional use, the concept of ideology refers to a state of conception, insofar as the focus lies in systems of ideas as these have been conceptualized by various agents in the social system. The use of the concept of conception in this passive sense precludes any explicit account for the active process of conception involved in the social construction of ideology.

1) Methodological critique of Marxist studies of education and pedagogy seems to be rare. See, however, Gorelick's (1977) discussion of the analysis by Bowles & Gintis (1976) and her general observations on how "in slaying old dragons with old weapons one can easily be hoist with one's own petard" (p 22).

The functionalist understanding of ideology cannot come to grips with the process of ideological conception, whether the concept of ideology is used to denote any structure of ideas or, as in the use on a Marxist basis, those with an inferred reproductive function. Ideology is merely taken for granted as a directing agency or as a legitimating consequence, while the actual explanation of these different functions as social facts may be left in the dark or explicitly bracketed, e.g. in terms of abstract notions of their "concrete realization" in the class struggle.¹⁾ This conception of ideology, therefore, remains one-sided and incomplete in so far as it is not integrated with an understanding of how the very form of ideology determines its functions, in that only specific issues can be brought to the surface of conscious activity and only specific thoughts are thinkable within this form. Hence, it should be a most important task of Marxian inquiry to pass from lip-service to theoretical demonstration of how, in any particular case, the dialectic of form and content asserts itself in the context of ideology. Thus, daring as the statement of such a purpose may seem, the following may be taken as an effort in that direction. In this context, we will attempt to approach ideology as a method of apprehending social reality in general, and the reality of schooling from the standpoint of research on teaching in particular.

In terms of the present theoretical framework, the basic formative feature of ideological research is to be found in its confinement to the level of appearances. In much the same way as Marx describes the practice of "vulgar" political economy, studying the processes of production, ideological research on schooling, we will suggest, studies the processes of reproduction. Throughout the development of his theory, Marx returns to the issue of how vulgar economy separates itself from classical economy, and his own mode of analysis, inasmuch as the former is unable to grasp the essential character of its phenomena. Thus, for instance, he writes in the Paris Manuscripts:

"Political economy proceeds from the fact of private property, but it does not explain it to us. It expresses in general, abstract formulae the material process through which private property actually passes, and these formulae it then takes for laws. It does not comprehend these laws - i.e., it does not demonstrate how they arise from the very nature of private property. Political economy does not disclose the source of the division between labour and capital, and between capital and land. When, for example, it defines the relationship of wages to profit, it takes the interest of the capitalists to be the ultimate cause; i.e., it takes for granted what it is supposed to evolve. Similarly, competition comes in everywhere. It is explained from external circumstances. As to how far these external and apparently fortuitous circumstances are but the expression of a necessary course

1) See the criticism by Hirst (1976) of Althusser's (1972) theory of ideology.

of development, political economy teaches us nothing. We have seen how, to it, exchange itself appears to be a fortuitous fact. The only wheels which political economy sets in motion are avarice and the war amongst the avaricious-competition" (Marx, 1844 Manuscripts, 1972, pp 56-57).

And further:

"He (the political economist; C.F.) assumes in the form of fact, of an event, what he is supposed to deduce - namely, the necessary relationship between two things - between, for example, division of labour and exchange. Theology in the same way explains the origin of evil by the fall of man: that is, it assumes as a fact, in historical form, what has to be explained" (op cit, p 57).

And, in Capital:

"Political Economy has indeed analysed, however incompletely, value and its magnitude, and has discovered what lies beneath these forms. But it has never once asked the question why labour is represented by the value of its product and labour-time by the magnitude of that value. These formulae, which bear it stamped upon them in unmistakeable letters that they belong to a state of society, in which the process of production has the mastery over man, instead of being controlled by him, such formulae appear to the bourgeois intellect to be as much a self-evident necessity imposed by Nature as productive labour itself" (Marx, Capital, 1972, p 223).

In criticizing political economy for staying with appearances, Marx describes the form of inquiry that aspires for a scientific status as necessarily transcendent in relation to these. Thus, the purpose of scientific theory is to bring into the open the essential reality behind the appearances. As he points out at several occasions, all science would be superfluous if the appearance and the essence of the phenomena directly coincided.¹⁾ We will consider how the methodology that pertains to the ideological practice of research is unable to grasp the essential character of its object of study in terms of the concept of fetishism.

In chapter 13, we described the fundamental aspect of the fetishism as defined by the appearance of social relations between commodities. The social relations between individuals appear as relations between the products of their activity. Social activity appears as determined by alienated forces out of human control, and the fetishism manifests itself in the ascription of a "natural" objectivity to these forces. Thus, the mystification of the fetishism involves the implicit assumption of an "eternal" validity of social constructions, which are made to appear as inevitable necessities and final facts. Whatever is not a part of the fundamentals of the positive appearances of everyday life will be considered impossible or dangerous, and the permanence of the alienated domination of the commodity form is taken for granted.

There is yet another kind of mystification, which may be seen in relation

1) See, for instance, Capital III, 1974, p 817.

to the fetishism. This form implies that the apparent objectivity of social phenomena is reduced to the subjectivity of conventional agreement or inadequate comprehension on the part of consciousness.¹⁾ In the present context, the former manifestation is of particular interest, since it is prevalent in theory and policy on schooling.

It involves the effort to explain basic social phenomena in terms of some kind of "social contract", through which a conventional agreement has been established. One example would be the effort to explain the basic character of schooling under capitalism with reference to the proceedings of politics or bureaucracy, through which a democratic and rational character is ascribed to the phenomena, and on grounds of which the feasibility of social change is then to be approached. In short, this mystification pertains to the variety of idealistic notions that are typical of ideological manifestos within schooling.

In educational research, the discussion of the "artificiality" of educational phenomena, as described in chapter 9, may be taken as another case in point here. To advance the idea that educational phenomena are "artificial" is merely to beg the question of their essential character, in so far as it is coupled with the idealistic notion that such phenomena may be changed by a simple act of will or by a social agreement on a new normative structure. What has to be explained, i.e. the possibility of a certain change in a normative structure, is merely assumed as a fact. However, that the phenomena are "artificial" may not rid them of their apparent objectivity, and their alienated character, which is correctly affirmed by the fetishism, does not vanish merely because one would like it to do so. Notwithstanding the "discovery" by philosophers that the phenomena are "artificial", they may appear to the individual actor to be as real and final.²⁾

However, while manifest ideologies may elaborate on the character of schooling in terms of idealistic, de-commodified notions, it seems that the ideological practice of scientific research can be fruitfully understood primarily in terms of the essence of the fetishism. We will consider how this may occur within the methodology in use.

1) Geras (1971, p 79) suggests that this form can be seen as an over-reaction to the fetishism.

2) Compare the discussion by Marx (1972, pp 218-219) of how the fact of commodity production appears to the producers, notwithstanding the "discovery" of the labour theory of value, to be just as real and final.

16.1 The Ideological Features of the Methodology

In chapter 8, we described the general character of the methodology in the abstract terms of nomothetic, technical and normative features. In the present context, we will consider how this methodology, through specific measures as to conceptualization and operationalization, may constitute the ideological form of scientific apprehension within the predominant paradigm in which approaches are made towards the reconciliation of the state functions of efficiency and legitimation. This is to say that our focus will be placed in an analysis of how the ideological practice of research on teaching may be pursued in and by the practical application of a particular conception of the general features of the methodology within the predominant paradigm.

The nomothetic feature pertains to the alleged universalization of the phenomena under investigation regardless of their individual manifestations, thus basically to establish knowledge of a generalized or "law-like" character. Sociologically, the Durkheimian notion of social facts may serve as an epitome of this feature, insofar as social structure is apprehended as a self-contained entity with a sui generis character. Psychologically, various conceptions are feasible, notably those referring to the nature of the human constitution, but in this study another approach has been focused upon, i.e. the one related to the issue of the external validity of observed regularities in human behaviour.¹⁾ The role theoretical conception described in chapter 6 may be taken as a typical example of the kind of nomothetic notions that seem to permeate the tradition of research on teaching, according to which individual cases are subsumed under structural aggregates like "roles", "patterns of behaviour" or "methods". Whatever categories are used, it seems that the crucial aspect of the predominant conception of the nomothetic feature, which is illustratively pointed to in the apprehension of its dichotomous opposite as the "idiographic dimension", is that the phenomena are conceived of in their abstraction from the individual subjects.

The assumed lawfulness of the system under investigation, i.e. primarily

1) See the discussion in chapter 9.1. In the present context, we may also take notice of the reductionism maintained by some behaviourist researchers on teaching which involves an explicit unwillingness and inability to conceive any educational phenomena in institutional and structural terms. While this extreme position is of minor concern to this study, the forthcoming analysis may nonetheless illuminate some aspects of its implicit sociological functioning and how, as Adorno (1967, p 77) puts it, "all varieties of psychologism that simply take the individual as their point of departure are ideological".

the relationships between teaching and learning, implies the existence of some sort of compelling force, abstracted in constructs like "role" or "personality", which manifests itself in the universality of particular phenomena. Typically, the "operant" character of the system is taken to provide for the unity of individual characteristics. Social structure appears as standing over against the individual, who, due to mechanisms like internalization, learning and sanctioning, adjusts his or her behaviour to the regulated order of the structure. Thus, empirically valid propositions are to be formulated as to how the individual in fact may be seen to follow the regulated order implied by the structural construct. This view of the nomothetic dimension seems to be an important aspect of ideological research, and in effect, it may be seen to provide a basis of the modus operandi of the ideological study of appearances. In this practice of research, what may need to be explained is simply assumed as a fact to be taken for granted.

The nomothetic features of the phenomena, e.g. in terms of institutions, roles or teaching methods, appear as objective realities void of all subjectivity. Within this objectivistic framework of apprehending the institutional facts in mechanical abstraction from the individual subjects, the alienated character of social structure seems to be taken for granted as inevitable and "natural", together with the compelling force of its domination of the individual. In so far as the regulated order of individual behaviour is established with empirical validity, the scientific task seems to be taken as accomplished, and in so far as the institutional facts have been ascertained in terms of apparent functional relationships, they seem to be thought of as explained.

The pursuit of nomothetic knowledge may be seen to manifest itself in ideological research on teaching as a massive reification of social structure.¹⁾ The objectivity of social facts is apprehended as a "non-idiographic dimension" by means of reified abstractions through which the actual processes of social reproduction and change become obscure. Individuals change and institutions change, but how do individuals change social structure? Within research on the "socialized" curriculum, aspects of social structure are typically approached as external facticities in relation to the individual subjects, but we are left in the dark as to how the institutional facts are produced and reproduced. Within teaching methods research, in which the pertinent features of reification are more subtle, the basic aim of formulating the lawfulness of teaching and learning is typically comprehended

1) A parallel argument can be made with regard to the reification of human nature within the ideological practice of psychology.

within a framework in which such lawfulness is taken to manifest itself apart from all socio-historical specificity. Social structure is implicitly posited as governed by immutable invariances and appears as standing on its own in a historical vacuum, without origin or future, save the one reproduced by individualistic perpetuation. In this sense, the a-historical posture of ideological research implicitly affirms alienation, but it does not provide for its explanation.¹⁾

Ideological practice implies the confinement of conscious activity to the realm of appearances. In research, the essential character of the prevailing mode of production is not taken into account as a driving force in the transformation of the phenomena, and the search for this kind of nomothetic knowledge underplays, to say the least, the possibility that established knowledge is in fact determined by that particular mode of production. Efforts are made to ascertain the law-like relations of phenomena in their ideological appearances, only to find that they slip through the reified concepts into other manifestations. Seemingly self-perpetuating, ideological research thus refines its reified concepts in the study of ever new superficial events, only to add its own mystifications to the processes of ideological reproduction. Itself a part of these processes, the methodology of research lacks the conceptual grasp of its own reified character. The methodology is unable to keep reification and alienation "under control", since such phenomena are conceptually non-existent, and the variables under scrutiny, whether called "independent" or "dependent", are all within the nomos of capitalist appearances.

In this sense, ideological research on teaching basically apprehends the phenomena in their mere capacity of distributive facts. Institutional roles, jobs, teaching methods etc are treated, descriptively or prescriptively, as external facticities in relation to human learning, likewise apprehended as objectified "performance" and the display of reified "knowledge". The "explanations" of these facts are given in terms of each other, e.g. teaching behavior is "explained" on the basis of learning behaviour, or vice versa.

1) The following statement may be considered in this context: "The bourgeois economists are so much cooped up within the notions belonging to a specific historic stage of social development that the necessity of the objectification of the powers of social labour appears to them as inseparable from the necessity of their alienation vis-à-vis living labour. But with the suspension of the immediate character of living labour, as merely individual, or as general merely internally or merely externally, with the positing of the activity of individuals as immediately general or social activity, the objective moments of production are stripped of this form of alienation; they are thereby posited as property, as the organic social body within which the individuals reproduce themselves as individuals, but as social individuals" (Marx, Grundrisse, 1977, p 832).

Alternatively, the character of teaching and learning may be "explained" on the basis of "functional requirements" or "individual characteristics". Common to the various forms is that both explanans and explanandum refer to the distribution of facts (institutional or individual), while the essential question of their actual production and reproduction is bracketed or altogether ignored.

To exemplify, we have seen in chapter 2 how the teacher's role is often described, in various terminologies, as consisting of so many "sectors" or "functions". If the role is described in this or that way on the basis of empirical analysis, we will want to know why this is so and which consequences, if any, these facts may have in the practice of teaching. If an explicit "explanation" is given in this research, however, and this is the exception rather than the rule, we learn in the typical case that the character of the role is due to the "functions" of the school or the "personality" of the teacher, i.e. another set of facts taken for granted.

Or take, as an example within teaching methods research, the "ideal" equation of teaching behaviour offered by Wallen & Travers (1963, p 490): $T = f(R_g, R_i)$.¹⁾ The suggestion that teaching (and, to be sure, learning) could possibly and adequately be framed in a formula of such closed finality of lawfulness may be fruitfully understood as an invitation to ideological research. Confining the inquiry to the realm of superficial objectivism, the search for the constant and variable values within this closed conception can go on forever so far as this research is concerned.

Within the concerns with teaching effectiveness, there is, as we observed in chapter 2, a persistent dilemma involved in the efforts to formulate adequate educational objectives. Necessary to the construction of a viable technology of transmission, the criteria of adequacy appear as entirely relative to specific opinions, and no firm basis seems to exist for the construction of effective objectives. Since the ideological mode of investigation does not recognize the criteria of any state policy in relation to the imperatives of the accumulation process of capital, in that they have been ruled out conceptually through the fetishism of commodities, the issue is approached solely from the standpoint of idealist negotiation. The search for effective objectives is delimited by the focus on the distribution of the various "belief-systems", without any recognition of the basic form that unite these beliefs, inherent as they are to a particular social formation. Thus, the criteria of effectiveness are apprehended as a matter of a net-balance of appearing opinions, and any resolution of the issue in any speci-

1) See the discussion on p 106.

fic case is thus likely to be over-run by the immanent transformations taking place within the anarchy of capitalist accumulation processes.

This last example, in particular, points to the fact that adequate accounts of even surface appearances are not easily arrived at in ideological research. While it is clear that such research cannot come to grips with the essential character of the social formation in which it operates, it is perhaps more surprising that it has paradigmatical problems even in the study of appearances. It seems that a general reason for this state of affairs is to be found in the confinement of the analyses to the mystifications of this realm, propelled by the competition and lack of class consciousness within the ruling class, which does not provide for basic explanations of how the phenomena are actually produced within the prevailing societal formation. Short of such explanations, the direction of influence in the patch-work of atomistic phenomena ultimately remains an open question.

This situation may be easily recognized through an examination of the general form taken by structural-functionalist and behaviourist "explanations". These forms of scientific inquiry invariably seem to take the basic premises of the prevailing mode of production for granted, and the external validity of specific observations is thus, in the last resort, conditioned by the reproduction of these premises. Why certain functions actually appear in the institutional structure, and why certain reinforcements of behaviour actually manifest themselves as such, are examples of questions that are "simply" begged as irrelevant to this mode of inquiry.

The second feature in our characterization of the methodology, the technical interest of knowledge, may be appreciated as to its ideological significance in this context. This interest pertains to the establishment of efficient means of prediction and control of objectified or objectifiable processes, and as such it is closely bound to the objectivistic apprehension of the nomothetic character of social phenomena. Staying within the distribution of facts, surfacial information may sufficiently provide for an ideological understanding of how certain effects are brought about on the basis of functional relationships or superficial causes. There is no need for a fundamental questioning of what causes such "causes", but efforts may be restricted to the formulation of statistical correlations as a basis of social technologies. The direction of influence, which may be ascribed to these technical relationships, is a matter of the distribution of appearing phenomena and the reproduction of their essential premises, in so far as the "independent variables" happen to be or can be infused with the capacity to function as controlling agencies. Thus, ideological research cannot determine the explanatory relations between the phenomena, except in a techni-

cal manner which is itself fashioned by external criteria. Again, structural-functionalist and behaviourist "explanations" are cases in point:

The reified character of this mode of inquiry is firmly anchored in the alienation of the social relations of production and reproduction. The technological pragmatism is geared towards the study of alienated relationships and the establishment of means of prediction and control, which may be entirely external to the "subjects" under investigation. As a matter of fact, subjective involvement and human emancipation are processes which constitute veritable threats to the feasibility of such technological steering and control. The methodological reifications entertained by ideological research are only intelligible, let alone practically applicable, to the extent that the "subjects" actually do, or can be made to, behave mechanically like "things". This argument is well advanced by Apel (1977) in relation to a reconception of Merton's (1957) well-known theorem concerning the "self-fulfilling" and "self-destroying prophecy":

"For the point of this theorem seems to lie in the systematic preclusion or prevention of system-isolation - in the very fundamental sense of a separation of the object-system and the subject-system of knowledge - by the understanding and reactive self-application of conditional predictions by the human subject-object of those predictions.

In this context, it also becomes clear why or in what sense quasi-nomological behavioral science - for example, explanations and predictions of consumers' behavior - is to be considered as a limit case of social science in the sense of quasi-natural science. For the reliability of the results of these sciences in fact depends on the possibility, to be secured under certain circumstances, of eliminating, at least for some time, the cognitive realization and reactive self-application of conditional predictions by the human subject-object of those predictions. Now such an elimination - and that is to say: establishing and stabilizing of a quasi-physicalistic subject-object relation - corresponds indeed to the leading interest of objectifying and explanatorily disposing of human behavior as a basis for social engineering or social technology; and hence also from this point of view (of knowledge-interest) is the limit case character of quasi-nomological behavioral sciences made intelligible" (Apel, 1977, pp 445-446).

The viability, i.e. the ideological practicability, of the technological model builds upon the conceptual reification of educationally significant structures (sociological, psychological, epistemological) and the externalized control of their practical reproduction. In so far as this conceptual reification, however, validly reflects the actual state of its social implications, the analyses will have to concern the relationships between externalized control and internalized legitimation of such control. This issue may be approached in terms of a distinction between explicit and implicit forms of legitimation. In relation to those features of the methodology discussed so far, i.e. the nomothetic and the technical, the most important implicit form of legitimation seems to pertain to the mystification which is inherent to the fetishized conceptions of objectified processes, as described

above. As to the explicit forms of legitimation, the reified conceptions of the nomothetic and technical features provide for certain logical derivations which may serve an apologetic function.

This becomes the case because the reified apprehension of the phenomena may provide a basis of the claim for value-freedom. In as much as the nomothetic character of the phenomena is conceived of as an objectivity beyond any and all individual manifestations of interest and control, the scientific account may be ascribed "neutrality" in relation to these. The ideal of value-freedom in scientific inquiry is thus seen to be approached in the pursuit of valid and reliable descriptions of the reified facts. Likewise, the establishment of technical relationships between reified sets of variables seems to preclude any evaluative intent and appears as void of all particularized interests. In this sense, the social and behavioural scientist may appear to be pursuing value-free knowledge in much the same way as the natural scientist conventionally appears to be handling the facts of nature, and any value attached to specific findings may seem to be extra-scientific.¹⁾ In effect, therefore, the technical interest may be seen to manifest itself in research on teaching as a faded neutralism towards all human purposes and forms of understanding, in that the power and control with which any social facts are infused are not taken into any explicit consideration.

Furthermore, it is worth observing how the objectivistic approach to social structure relates logically to the justification of individualistic notions of educational transmission. Since social structure is conceived as a reified entity beyond the transcendent capacities of any and all individuals, and, moreover, this structure is only intelligible in and through the conformity of the single individuals, the only thing open to educational change is the individual in his or her adjustment to the compelling forces of the structure. Short of any methodological account for change in the nomothetic structure itself, its stipulated stability and immanent transformation is apprehended, from an educational point of view, as a function of individual development. Thus, the sociologistic understanding of social structure may serve as a legitimation of psychologistic frameworks of educational reproduction.

1) Of course, the "grand science" of physics is frequently invoked to justify such scientific notions. Compared with e.g. medicine, which is also quite popular with educationalists in this respect, this is becoming increasingly difficult, however, since physicists themselves are forced to question the reified epistemology, which is unable to cope with e.g. the paradoxes of quantum mechanics. For an illuminating presentation of the new physics in this perspective, see e.g. Zukav (1979).

Such notions of reproduction are also conveniently suitable for the task of providing for effectiveness and efficiency. Commodification within schooling is, as we have discussed in previous chapters, a matter of placing individual actors in profitable contact with the market, and to this end educational programs and evaluations are geared towards the individual as a unit of saleable labour power. Superficial individualization thus provides for a focus on the reproduction of the commodity form in terms of psychological and social-psychological processes with the simultaneous exclusion of alternative approaches, e.g. in terms of class.

Besides the nomothetic and technical concerns within the internal reconstruction of the paradigm, we have pointed to the appearance of a normative character of research on teaching. This feature of the methodology is evidently closely related to the feasibility of explicit legitimation. This is most obvious in those cases in which the reified character of conception and operationalization is thought of as "naturally" justified through the manifest ambition to improve on the practice of schooling. Much research, explicitly designed to ameliorate the curriculum or to formulate "good" teaching methods, is of this kind. However, the normative feature appears in more subtle ways in the variety of idealistic approaches which, often ostentatiously "purely descriptive", elaborate the attitudes, values, intentions etc of different social groups without any recognition of the social origins of these phenomena.

In The German Ideology, Marx described "the whole trick of proving the hegemony of spirit in history". This trick is taken to involve the following three efforts:

"No. 1. One must separate the ideas of those ruling for empirical reasons, under the empirical conditions and as empirical individuals, from these actual rulers, and thus recognize the rule of ideas or illusions in history.

No. 2. One must bring order into this rule of ideas, prove a mystical connection among the successive ruling ideas, which is managed by understanding them as 'acts of self-determination on the part of the concept' (this is possible because by virtue of their empirical basis these ideas are really connected with one another and because, conceived as mere ideas, they become self-distinctions, distinctions made by thought).

No. 3. To remove the mystical appearance of this 'self-determining concept' it is changed into a person - 'Self-Consciousness' - or, to appear thoroughly materialistic, into a series of persons, who represent the 'concept' in history, into the 'thinkers', the 'philosophers', the ideologists, who again are understood as the manufactures of history, as the 'council of guardians', as the rulers. Thus the whole body of materialistic elements has been removed from history and now full rein can be given to the speculative steed" (Marx, The German Ideology, 1972, p 139).

Of course, this account for what is needed to turn a particular conception of history into ideology is related to Marx's topical interest, i.e. the critique of German speculative philosophy, but it seems that the general

thought can be applied to the present discussion of methodological features of research. In the following chapter, we will try to demonstrate this from the point of view of the PIL study, concerned with curricular objectives, and here we may observe how the argument may bear upon the character of teaching methods research by taking an example from this field.

Wallen & Travers (1963, pp 452-453), in their survey of the tradition of research on teaching methods, recognize a number of circumstances which have been used to discuss the origins of teaching methods or patterns of teaching behaviour. Summarizing their findings, the authors contend that traditional research comparing the efficiency of different teaching methods lacks scientific sophistication in the sense that the variables are merely derived from common opinion or that they are only "intuitively" derived.

Teaching methods are given labels like "authoritarian", "democratic", "traditional", "child-centered" etc, and research is carried out in order to evaluate the effects of such different methods, described in so many conceptual frameworks. However, as e.g. Kliebard (1973) points out, research on these issues has manifested a persistent difficulty in demonstrating any significant differences in outcome between the various methods.

Now let us picture this kind of research in terms of the ideological "tricks" described by Marx. A set of items of teaching are conceptualized on the basis of "common experience", "intuition" or "philosophy" and labelled, say, "child-centered teaching" in relation to a polar opposite, conceptualized in a similar vein. These ideational concepts appear as wholly separated from any historical materiality, i.e. the prevailing mode of production and reproduction. This is trick one.

Next, research, e.g. through the administration of an attitude test designed to measure the dimensions in question, establishes statistical connections between the various concepts and differentiates between the teachers on this basis. The variables may be seen as really interrelated since they somehow correspond to the reality of teaching as conceived by the individuals in the various groups and since they are somehow integrated in a common social definition of experience, e.g. on the basis of public debate. The concepts and variables are thus brought into a certain order, and this is the substance of trick two.

Then, the outcome of teaching in the differentiated groups of teachers may be studied, e.g. in terms of student achievement, and the differences are tested for statistical significance. The ideas, as ascertained in the previous steps, are related to the various groups of teachers as - and this is the critical move - determinants of their teaching and the teachers appear as representatives of the ideas, being realized in their actual prac-

tice. This is trick three.

This example, admittedly depicted here in a simplified manner, seems to describe a not uncommon mode of operation within traditional research on teaching methods, and if it has any general relevance, it may point to one feature of the background to the persistent failure to demonstrate significant differences between various "methods" of teaching. Should it be the case that the differences only exist in the conceptual apparatuses, while the actual practice of schooling is determined by processes outside the grasp of these concepts, the lack of differences in outcome is no great wonder.

The ideas, e.g. norms, intentions, attitudes, are in this kind of research taken for granted as a controlling force of educational activity. Rather than inquiring into the historically and socially specific mode of production of appearances, whether ideas or patterns of behaviour, this research stays with the distributive facts and stipulates that one category, ideas, is the determinant of another, social behaviour. If, for instance, educational objectives actually serve as determinants of educational processes and outcome, this is something which is not explained, but rather assumed as a fact. The possibility that implicit or explicit notions of the educational aims may have other functions than directing the activities towards goals is thus efficiently ruled out from the scope of consideration.

This kind of idealism, according to which the activities of schooling are stipulated as actually controlled by the actors' views of the values of education, seems to be inherent in predominant research on teaching. Thus, while the reified conceptions that pertain to its technological model of teaching may seem to negate human purposefulness, such a basis of teaching and learning seems to be affirmed by the idealist conception of the normative purpose of research. However, this apparent paradox may be resolved to some extent once the concrete meaning of the normative feature is taken into consideration.¹⁾

In the first place, the agents of normative purposefulness are not the "subjects" under investigation, e.g. the students. On the contrary, as noted above, they are apprehended as in principle subjected to external control. The agents of the normative purpose are instead localized in the external realm of policy-making, bureaucracy, the technical rationality of scientific research itself etc. The objectivism of the methodology may thus appear as compatible with the subjectivism of idealist negotiation, insofar as the

1) Some aspects of the contradiction involved here will be further discussed in the last chapter.

(value-free) pursuit of the reified facts is taken as a mere technical endeavour in view of the legitimized decisions eventually to be made within the external realm. Hence, the implicit mystification of reification may appear to be reconciled with the explicit legitimation of normative deliberation. This legitimation, in its turn, may make the reified strategy appear rational and objective.

Furthermore, we may consider the scope of the normative posture in relation to its idealist interpretation. So long as the purposeful activity takes place within the framework of established norms, it may be theoretically unproblematical in terms of the idealist notions. When the legitimacy of external control is sustained by an internal understanding which corresponds to the limits of purposeful activity as defined by such control, these notions may appear valid. Thus, when the ideology of ideology speaks of "system of values, beliefs etc directing action", its validity may be seen in relation to the circumstance that the ideas and the actions at issue are intrinsically related as two sides of the same ideological totality.

Role theory, as described in chapter 6, may be taken as a typical expression within actual research of the basic assumptions of the ideological conception of ideology. There is no distinction made between social norms and ideology, but both categories are generally apprehended as merely functional to the direction of action in a social context. Research on this basis elaborates upon the empirical manifestations of role conformity, but it does not comprehend the relationships between social norms and the structure of material production. Instead, it takes recourse to the realm of appearances in which the plausibility of idealist notions of human purposefulness can be maintained. The empirical facts of role performance in conformity with norms are given an idealist interpretation, in terms of social consensus and individual internalization, but it is "forgotten" that the scope of application may be conditioned by the reproduction of the essential features of the prevailing mode of production. In this way, the content of social norms and ideologies is merely conceived of as social activity towards goals,¹⁾ while other feasible functions, e.g. in terms of legitimation, are disregarded. Certainly, the basic manifest content of norms may be conceived as action, as e.g. von Wright (1968) argues, but this notion may be circumscribed by the amendment that the latent content of ideology is reproduction, and that ideas may be socially normative only to the extent that they are

1) This may be taken as a basic feature of the deontic logic at issue (cf von Wright, 1963, 1968).

deemed legitimate.¹⁾

In conclusion, we suggest that the actualization of the nomothetic, technical and normative features of scientific methodology as objectivism, neutralism and idealism respectively, within predominant research on teaching, constitutes the symbiotic form in which the state functions of efficiency and legitimation are pursued. This ideal-typical form may be seen to define the character of the "explication" of the fetishism of commodities within research and thus the basic features of the ideological practice of research. These features may be taken to have a certain relative validity attached to them, and this validity specifies the capacity of the methodology to successfully operationalize the state functions within the general technological model of schooling and teaching. A number of variations may be feasible within this general model, and these alternatives may be seen to compete within the research apparatus on the basis of their actual and prospective advantages in terms of efficiency and legitimation.

An objectivism entirely abstracted from the essential contradictions of the prevailing social formation, a neutralism based on the reproduction of alienated forms of social practice, and an idealism with obscure authors in terms of actual social control; in its ideal-typical form a complex web of reifications is instituted which may seem to hold the promise of technological and reproductive viability. As observed in chapter 10, however, this is hardly the real case, since the practical information on how to pursue educational ends by means of standardized methods of teaching is inconsistent or non-existent. So far, therefore, it seems that ideological research within the predominant paradigm is primarily to be understood in the context of the function of legitimation. Through its ideological form of apprehending the task of science, this practice of research on teaching may thus provide apologies for and mystifications of the essential conditions of educational commodification, while appearing to deny these very conditions. This may occur actively in and by its reproduction of fetishized conceptions and reified forms of educational discourse, and passively through its substitution for coordinated opposition and comprehensive critique of the educational commodity form.

1) Hence, different forms of stating educational aims may relate in different ways to the issue of their normative and ideological functions with regard to educational activity. For instance, the normative content of behavioural objectives may be explicit and readily available for evaluation, but this form may also entail certain difficulties in terms of ideological legitimation. This issue is discussed in the next chapter.

17. Some Phenomena of Research on Teaching Reconsidered

This study took its initial point of departure in a description of some aspects of the phenomenon and social context of research on teaching through an enumeration of a number of research undertakings in the USA and Sweden during the present century. The tradition of research was narrated in terms of curricular and teaching methods research, and an attempt was made to point out certain characteristic issues, and their general mode of definition, within this framework. Then, in Part II, the scientific methodology of such research was discussed with particular reference to certain theoretical and practical features of the predominant paradigm. Having now analyzed also the ideological practice and functions of predominant research, we are in the position to reconsider the original account and to provide some conclusions as to how the observed features can be understood. Hence, in this chapter we will reformulate some of the issues raised earlier and approach a general answer to some of the questions which so far have been left open. In particular, we will consider the issue of the relationship between curricular and teaching methods research within the framework of the predominant paradigm.

To avoid any misunderstanding at this point, it should be emphasized that the following reconsiderations on some specific aspects of the predominant paradigm are carried through from the explicit standpoint of the presently topical theory of ideology. Thus, to state a truism, they do not pretend to picture the "whole truth" any more than this theory does so. However, they may provide some complementary suggestions as to the general interpretation of the phenomenon of research on teaching and perhaps illuminate some aspects of its concrete character which are not always recognized in pedagogical analysis and discourse.

In the early decades of this century, the educationalists within the "scientific movement" elaborated a thoroughly reified conception of human knowledge in their search for well-defined educational commodities. Theorists like Bobbitt, Cubberly and others found their analytical tools in the alien-

ated sphere of industrial commodity production and translated its concepts directly into an educational language. Thus, the school could be seen as a factory in which the raw material - the unschooled child - was to be processed into the desired finished product - the ideal adult. Analyses based on such views were presented in prestigious settings, like the NSSE Yearbook (cf Bobbitt, 1913), and it seems that these views were quite representative of major educational theorizing at the time.

Massive industrialization and extensive bureaucratization appeared as increasingly objective phenomena, and social structure apparently became increasingly suitable for reified conception and valid description in terms of statistical measures and depersonalized roles. Social science rapidly developed its capacity to quantify social relationships, and statisticians and social engineers successively refined the analytical means of capitalist reproduction. Secure in their important positions within the sweeping accumulation process, the active ideologists could approach the technical problems of the management of alienation and schooling for Progress and Prosperity with the growing sophistry of the "scientific method". Evidently, the need for ideological mystification in the language of research constituted no critical problem, and the task of educational commodification could be pursued in a rather straight-forward manner.

Thus, Bobbitt (1918) could talk leisurely of the "play-level" as a "complement" to the "work-level" to justify his obsessive, if yet perhaps inadvertent, commitment to capitalist reproduction, while Peters (1942) later had to argue at length that the same techniques were "democratic" and in the pupil's "best interest". In their times, it seems that such notions had the capacity of passing as valid forms of scientific understanding, but it also seems that similar conceptions of the scientific task may play crucial parts in the legitimation of more contemporary efforts within the curriculum field.

For instance, the influential taxonomies by Bloom et al (1956) and Krathwohl et al (1956) of the "cognitive" and "affective domains" may be taken as typical examples of the kind of conceptions of knowledge that still seem to permeate this field. Having paid a certain amount of lip-service to the "fundamental unity of the organism" and the "arbitrariness" of all classifications, they proceed to define the successive stages of cognition and affection as basically distinct realms and as largely uncontaminated by each other. Such extensive reification of human consciousness may seem "practical" and rather innocent, but it is also very well adjusted to the task of promoting the efficiency and legitimation of educational commodifi-

cation.¹⁾

When the efforts of theory and research are more clearly related to the benefits of an external audience, their ideological character may have to become more subtle. The Tyler Rationale, originally presented as syllabus for an education course, can be taken as an illustrative case in point here (cf Tyler, 1949). As we noted in chapter 9.2, the problems of curriculum construction are approached from the standpoint of stating educational objectives on the bases of three main sets of criteria; studies of learners, studies of contemporary social life and suggestions from subject specialists. All these criteria, however, clearly fall back on certain assumptions as to the functioning of a particular society, which in this case "happens" to be characterized by the capitalist mode of production.

The individual's needs and capacities cannot be ascertained without reference to established social structures (or to psychologistic reification of the human nature), and expert opinion cannot either (without the popular epistemological reification of knowledge into "the structure of the disciplines" and the like). As far as the studies of social life are concerned, they rely, like the other criteria, on a "philosophical screening" which for its relevance is by no means independent of this "contemporary life". However, the possibility that such a screening is likely to manifest itself practically as a variant of bourgeois ideology is not taken into account. Instead, an autonomous status is implicitly ascribed to the various criteria, and this ascription may be seen as conveniently suitable for the effort to legitimate the reification of knowledge and learning which is functionally related to the efficiency of educational commodification.

It seems that the tradition of research on the "socialized" curriculum in general manifests a massive ossification of human knowledge and cognition - aptly denoted by the etymological meaning of "curriculum" as a "race-track" of objective features - in its attempts to establish the educational "objectives" as pre-packed commodities to be distributed to the consumers. However, its success in terms of the reproduction of labour power qualifications is dubious. Since the ideological apprehension of the prevailing mode of production does not allow for its essential characterization in terms of the commodity form, the basic features of reproduction are not recognized and thus there can be no systematic account given for what constitutes effectiveness in this respect. Instead, the search for the adequate "criterion" manifests itself as a constant pursuit of definitions compatible with predomi-

1) For instance, Holly (1974, p 138) holds the view that the rigid separation of "valuing" from the processes of rational thought verges on the "comic".

nant opinions on the internal values of education.

From the early "scientific movement" to the Tyler Rationale and the late concern with behavioural objectives, performance-based schooling, programmed instruction, accountability etc, there seems to be a persistent streak in predominant curricular analysis of a vigorous preoccupation with the reformulation of the capitalist functions of schooling into the languages of educational ideologies. From a theoretical standpoint, it may thus seem that the scientific efforts to reconcile the internal and external functions of efficient and legitimate reproduction have in fact resulted in embarrassingly little more than just so much ideology. The crucial issue of the theoretical explanation of how existing curricula are actually socially constructed, for instance, is largely untouched by this tradition.

However, while the omitting of critical questions as to the foundations of capitalist reproduction seems to be a common way of trying to maintain the legitimacy of curricular research, other means are feasible in research on teaching methods. Here the question of the legitimacy of the objectives is often simply deemed irrelevant in favour of a focus upon the means to reach predetermined ends, whatever the procedures of establishing such ends may be. What is searched for is scientific information on how predictable results are produced in and by specific practices of teaching. Centered around a technological model of external control, predominant research of this kind is not primarily concerned with the particular content of manifest learning, but it focuses on the degree of efficiency with which any pre-defined objective may be effectuated. Thus, it seems that the scientific task in this respect is instituted as the establishment, theoretically and practically, of the most efficient means of educational reproduction.¹⁾

Whereas curricular research focuses on the explicit content of educational objectives and programs, this content only appears relevant in teaching methods research as a matter of its definition in a particular form. With the function of commodification, this form is the technological in which the requirements for objectified and hierarchical ordering of outcome can be met. This combination of consequences, in its turn, may allow for the application of rules of legitimation which pertain to the recognition and reproduction of individual differences, i.e. notions to the effect that the efficiency of schooling and teaching in establishing objectified hierarchies of outcome is determined by the various capacities of single teachers and

1) Of course, the technological notions of predominant research on education have been questioned by numerous writers in the field (e.g. Apple, 1972; Franklin, 1976a; Kliebard, 1973). Unfortunately, however, abstract condemnation seems more frequent than comprehension of the basic relations of such notions to the capitalist mode of production and reproduction.

students.¹⁾ Thus, a particular conception of the individual is needed to supplement the general reification of educational knowledge and social relationships. In this sense, curricular and teaching methods research within the predominant paradigm jointly presuppose and elaborate the reified model of a "homo discipulus"; the scientific notion of the pupil as a passive recipient of externalized facts according to innate response capabilities.²⁾

In general, the scientific aim of research on teaching methods is construed as the formulation of the internal lawfulness of the relationships between teaching and learning. The ideological character of the methodology used to pursue this end has been accounted for in some detail earlier and we will just add a few comments here. These concern the phenomenon of the increasing "statistization" of pedagogy, notwithstanding the late advancement of pleas for "softer" approaches among educationalists.

"As a broad generalization I would claim that the best-developed theory used in educational research is the theory of statistical design of experiments. The sophisticated level that has been reached in these matters by the latter part of the twentieth century is one of the glories of science in the twentieth century, and the dedication to insisting on proper organization of evidence to make a strong inference has been one of the most creditable sides of educational research over the past fifty years" (Suppes, 1974, p 6).

Certainly, sophisticated use of statistics may provide important information on which to base scientific arguments, but its substitution for explicit pedagogical theory - and as far as much empirical research on teaching is concerned, "substitution" seems to be the proper word - has to be explained, rather than being merely condemned or evaded as a fortuitous fact. We would suggest that such an explanation can be approached on the basis of the present theory of ideological research.

From this point of departure, statistics, as used within the predominant paradigm, may be understood as the very medium of scientific apprehension of ideological appearances. The construction of viable social technologies as a means to centralized prediction and control depends upon the availability of generalized information on the relationships between and the tendencies emerging out of the interaction of alienated units of social activity. Statistical measures may adequately spell out the character of the resultants of such activity - the alienated activity of molecular units bound

1) The issue of the educational construction of social deviance and means of social control may be observed here. See e.g. Apple (1971, 1972, 1976); Franklin (1976a, b); Karier (1967, 1972); Marks (1976-77); Young (1971).

2) The reified epistemology entertained by research on what we call "homo discipulus" here is eloquently described in terms of a "psychometric model" by Esland (1971). Also, it should be clear that this pedagogical subject is the next of kin to "homo sociologicus" (Dahrendorf, 1968) and "one-dimensional man" (Marcuse, 1964).

cing towards each other constituting the vectors of the system - and thus provide for a certain rationalization of reproductive social processes. The internal logic of appearing forces may be ascertained with a high degree of certainty and control over the prevailing sources of variance, but it goes without saying that the distributive facts of the variables in question only derive their relevance from the reactivation of those essential conditions on which they are based. The "statistization" of pedagogy therefore may be seen to signify the pervasiveness of scientistic notions, legitimized also by reified conceptions of the character of natural science, which relate functionally to a state of society in which the abstract forces and blind necessities of capitalist production rules assert themselves as "overriding laws of Nature", and in which the task of predominant research is primarily instituted as the mere management of alienation. However, since this study is not specifically concerned with the sociology of statistics, we will move on to a more topical issue, involving a prime concern with educational objectives in relation to methods of teaching.

17.1 The Case of PBTE

The mode of schooling called "performance-based" or "competence-based" education (the difference is of no significance here), particularly in relation to teacher education (PBTE), may be used as a case in point to illuminate several issues of concern to the present discussion of ideological research. Focused on the ideas of behavioural objectives and technical skills, this model seems to welcome any reified conception of the teaching-learning relationship which may possibly enhance educational effectiveness and efficiency and, we may add, the legitimacy of educational commodification.

The distinguishing features of PBTE are highly controversial among educational theorists, but it is an illuminating fact that this form of schooling has nonetheless attracted great interest from politicians and bureaucrats within the state, particularly in the US. Although the actual costs of implementation have not been ascertained, and the various program features are far from settled theoretically, the approach is sometimes even forced upon educational practice by legal means. When this happened in Texas, for instance, university faculties, learned societies and other groups protested

that academic freedom was being infringed upon, and the advancement of such programs was slowed down (e.g. Gage & Winne, 1975; Hertzberg, 1976).¹⁾ Among a number of researchers, however, the ambitions of defining the "theoretical" advantages of PBTE still seem to be well and alive.

It is quite common that educational behaviourists respond to criticism of the basic premises of approaches like PBTE by stating that these kinds of methods may well be adopted to any educational intent. Thus, it may be argued that such methods merely concern a form "broad enough to embrace all the modes of education which have presently been developed" (Joyce, 1975, p 136), that, for instance, "humanistic" concerns and PBTE are not necessarily antagonistic since such concerns "can be met by core elements of the PBTE approach" (Gage & Winne, 1975, p 152), and the like.

The basic argument runs something like this. Education is an activity intended to result in learning. To know whether this is in fact happening, the relationship between aims and outcome must be kept in check and this, in its turn, presupposes the application of a certain logic of stating the objectives and evaluating their attainment. Whatever the objective happens to be in any particular case, the educationalist will want to know if, and to what degree, it is actually being achieved within the program in question. The objective may be an expression of a "humanistic" concern with, say, the provision of "meaning", and if so, the educational behaviourist may establish the means to evaluate the degree to which this is in fact happening. If the objective is to have educational significance, so the argument goes, it must be available for unbiased evaluation, rendering student certification possible and enhancing the possibility of further improvement of the program.

Thus, the educational behaviourist's main concern is with certainty and control, whatever the objective, and the approach of PBTE is apprehended as a neutral technique, capable of coping with all sorts of educational intentions. What the behaviourist tends to overlook, however, is the meaning of certainty and control in terms of the practical implications of these technological notions. For one thing, we may note that such a focus, which appears as an inherent aspect of the "scientific method", implies the prevalence of very specific conditions of power and authority which are simply taken for granted. Therefore, we may observe that while the manifest content of educational objectives may be irrelevant to the behaviourist, the form of pedagogical theory and educational practice is certainly not.

That PBTE is a form and a methodology relates interestingly to the issue

1) In Sweden, PBTE remains a mere possibility. However, the development and fate of the so-called MUT project within the National Board of Education may provide insight into issues related to the present discussion.

of the interaction of research, policy making and teaching in the pursuit of the state functions of schooling. The specific legitimating concepts of manifest educational intentions can be described in so many words, provided the form of commodification is accepted. This acceptance may be seen as promoted by the methodology of predominant research, the mode of policy-making, and the methods of teaching as defined by techniques like PBTE. The epistemological, psychological, and sociological assumptions of ideological research correspond to the form of policy-making within the state, as described in chapter 15, and to the technological form of practice of which PBTE is an illustrious case. The functional relations between these forms of state activity provide for a common direction toward technological efficiency and they may be used to legitimate each other, e.g. within the general framework of the necessity of fending off the respective indications of a fiscal crisis of the state.

In effect, PBTE signifies a limit case of educational technology in which the formal means have become final ends in themselves. Lacking the knowledge of efficient teacher qualifications - since such curricular knowledge of teacher education has not been provided by teaching methods research - it thus seems that the general form has been adopted as efficient in itself, due to its capacity in terms of the mystification of the basic features of educational reproduction. This is to say that the "neutral technique" of PBTE may be seen as ideological primarily in and by its implicit legitimation of the commodity form through the vindication of its relevance to any and all educational intents. In sum, all educational objectives may be feasible within PBTE, provided that they are captured in the form of ideology.

17.2 The Case of the Project PIL

Having now reconsidered some general issues involved in the research on teaching referred to in chapters 1, 2 and 3, it remains to account for some aspects of the PIL study described in chapter 4. In the following discussion, we will try to elucidate certain features of the topical theory of ideology in the concrete context of this specific research undertaking and thus attempt to make use of this example in order to illustrate the explanatory potentials of the theory. In particular, we will consider the issue of how

the form and content of ideological research may influence each other and how the results of the PIL study may be interpreted in connection with the particular methodology in use. The discussion will be tentative in that the intention is not to "prove" the validity of some specific standpoint but mainly to suggest certain ways of interpretation which may serve as a basis of considerations on pedagogical methodology in general.

As a background to the discussion of the actual results obtained, we may first take notice of the character of the study in terms of the "three tricks" described by Marx and previously applied in this study in the context of teaching methods research (see p 196). Thus, to "recognize the rule of ideas", the PIL study took its point of departure in official policy documents and focused on expert opinion as the "obvious" basis of pedagogical inquiry and planning in relation to the practice of schooling and teacher education. There was no doubt about the general possibility of controlling educational practice by the steering of policy but this premise of the entire project was assumed as an implicit matter of course. This is trick one.

Having extracted the ideas of "those ruling for empirical reasons", the next step was to get these ideas into some kind of coherent order. Several possibilities were open here, the most sophisticated being the elaborate use of statistics. In the present case, factor analysis was employed to connect the various items to each other, resulting in the so-called "occupational functions" of teaching. Thus, we may learn, for instance, that "objectivity" is related to a "cognitive" function, "democracy" to a "social-emotional" function, "debate and research" to a "developmental" function, and so on. By means of statistical computation, all the relevant educational ideas of concern to the analysis were thus framed in the neat structure of a number of "functions". The ideas were to be seen as really tied to each other as they somehow had to be based in the empirical reality of schooling as conceived by the respondents, and their "mystical connections" were thus established as facticities of a certain validity, also in statistical terms. The actual degree of sophistication of the statistical procedures could be questioned as well as the technique of gathering data and so on, but with these technical provisos the ideas were really interrelated in a definite manner. This is trick two.

What remained was largely the problem of tying the ideas to educational practice in a way that appeared to remove their mystical character of fully autonomous conceptual structures. This could also be done in several ways but the principal method in the PIL study was to ascribe, in more or less explicit forms, a technical-rational status to the ideas in terms of their

professional execution in actual teaching. The structure of ideas was defined as the "teacher's occupational functions" and approached as a result of expert consideration on how to realize the ideas in actual teaching by actual teachers. Thus it follows, for instance, that teacher training could be regarded as a professional preparation in the task of turning the ideas into educational reality in future teaching in the school, e.g. so that the discrepancy between the opinions on ideal states and the actual situation could be considered a matter of "training needs". Hence, the ideas, and their mystical connections, were established as technically "functional" to the pursuit of "good" teaching by their professional guardians, the teachers. This mode of acting upon the original, implicit assumption of manifest ideas as the prime determinant of real teaching may be seen as the third trick of the ideological strategy at issue.

The ideological mode of apprehending educational norms and opinions created certain problems of interpretation within the PIL study. We have observed some of these in chapters 4 and 9.2, and we have also pointed to the general pertinence of these kinds of problems to techniques such as job and role analysis. Specifically, two issues were left in obscurity and are thus in need of clarification; 1) the relationships between evaluative units at different levels of description, and 2) the evaluative character of the manifest content of the units at such different levels. That is to say, explanation is needed as to how the form of ideology may assert itself in different contexts, and as to why certain particular evaluations may appear within these contexts. In the present case, the issues pertain to the possibility of giving a theoretical account for the relationship between the results in different sections of the questionnaire, and for the fact that certain "functions" were evaluated as more important in specific respects than others. In attending to these issues in the following, we will simplify the discussion by concentrating on sections A and B(2) of the questionnaire since they were taken to represent polar opposites in terms of "levels of abstraction" of the items in the study.

Within the ideological view of ideology employed in the PIL study, the A level represents educational ideology in terms of states to be striven for, while the B(2) level represents descriptive reality in terms of critical incidents in actual teaching. From this position, the "normative" character of the A items, based in official policy documents, implies that they were apprehended in their assumed capacity of steering educational practice. It is the function of ideology, in this understanding of the issue, to direct action in the social world. In order to do that, i.e. to actually function as a controlling agency, the normative statements somehow have to relate in a

decisive way to the practice of teaching. Action by coordinated agents should be taken on the basis of the normative commitment, and in cases of conflict as to how to act, the normative stance taken should point to adequate resolutions. Although we do not have to assume a rigid technological relation between norms and action, a definite correspondence must somehow exist between these "levels" if normative control of practice should actually prevail as a general principle. In short, to direct action in line with norms, their content in terms of such action must obviously be recognized by the actors (see the discussion on p 199).

However, this did not seem to be the case here. The "normative" and the "descriptive" levels appeared entirely disconnected according to the statistical analyses. This fact constituted a major dilemma in the analysis of the data, and no explanation could be supplied by the job analytical rationale in use.

To approach an explanation of this "strange fact" of a lack of empirical relations, we will have to deflate the assumption of an analytical equality of norms and ideology, i.e. the notion that ideology is basically a system of norms directing action, and propose that the policy statements in question, while surely being ideological, are not "normative" at all, as this term is commonly used. This suggestion is based on a view of deontic structures, which entails that while the manifest content of norms is action (cf. von Wright, 1968), the substantial function of ideology is quite something else.

Ideology has no history of its own in the context of class society. This common Marxian observation means in the present context that the ideology of schooling appears in a form, which is as relevant to its own focus, i.e. the Swedish comprehensive school, as it is to, say, elementary schooling in the US half a century ago.¹⁾ Certainly, the explicit formulations and the stress on specific features may vary within the basic structure, but the form of ideology is "omni-historical", to use Althusser's (1972, p 264) term, and appears in a manner which is structurally determined by the essential character of the mode of production. Thus, the manifest content of the ideology of schooling may adjust itself (or rather, by conscious deliberation by active ideologists) to new conditions in the practice of schooling, refining the terminology and the conceptual coherence of the system, but the basic form remains. Within this theoretical framework, the autonomy of norms and ideas is not considered as absolute, as the ideology of ideology would have

1) The similarities of teacher "roles" accounted for in widely differentiated social contexts were observed in chapter 2.

it, but their autonomy is relative to the prevailing mode of social activity. Thus, considering the essential feature of schooling as educational commodification, and apprehending ideology in the context of the provision of efficiency and legitimation, we may on this basis suggest an interpretation of the "strange facts" involved in the PIL study.

The "normative level", i.e. the manifest statements of "ideal states" expressed in policy, may be taken to stand as a reified conception of the alienation of schooling. It reflects this reality with a relative validity in its "omni-historical" ignorance of the social determination of educational practice. The ideas are separated from practice inasmuch as this corresponds to the actual reality of impotent ideas. Furthermore, the ideology reflects actual commodification in its specific content. Thus, the ideology is reified in its disconnectedness from the actual transition of practice and it describes, within this form, the specific features of commodification under certain socio-historical conditions.

This is to say, that in its relatively autonomous form, the ideology gives an account of the "nature" of commodification, and in its manifest content, it "explains" on the basis of educational commodification (or with the postulate of educational commodification), why practice should take on a certain course. This explicit content, then, presents a legitimation of specific manifestations of commodified practice on the basis of how it "must be" in order to function adequately as educational reproduction, and ultimately as reproduction of the social relations of production. Therefore, within the present interpretation, the "normative" statements stand technically isolated from "descriptive reality" for the very reason that this corresponds to the actual social impotency of the ideas in the transformation of practice and, moreover, they manifest in their content how things "must be".

The policies cannot transcend their ideological character because then the appearance of autonomy would erode in the explicit pursuit of commodification, raising critical issues to the surface of politics and thus endanger their basis of legitimation. Instead, the "normative" ideas take on a reified character and present themselves as fully autonomous controlling agencies of practice, while in fact this very character contradicts any such possibility.

The autonomy is approached ideologically as a mere matter of individual voluntarism, and everyone is seemingly given the freedom to accept or reject the ideas and to define their meaning in actual practice. That in fact any educational effort in the school is framed in a pattern of social dependencies in which private interpretations of purposes are likely to nullify each other, and that the reified ideology leaves no room for conscious de-

liberation of its socio-historical foundation as a basis for planning and coordination, is efficiently ruled out from the scope of consideration. Everyone is free to define the practical meaning of the ideas as he or she wishes in reified educational discourse, but no opening is given as to how these various interpretations could possibly result in the joint framework which seems necessary to educational action in terms of fundamental change.

However, here we may observe that "steering" and "control" are ambiguous terms in the framework of ideology, since ideology does no doubt take part in the transformation of practice but alas in another sense than imagined by the ideology of ideology. In the present case, the "normative" notions take part in steering and control predominantly in a negative sense in so far as they substitute themselves for a theoretical conception of educational practice in which the actual determinants could be made explicit and thus open for educational deliberation. Instead, by presenting itself as "normative" in autonomous abstraction, the manifest ideology legitimizes prevailing practices and mystifies their actual functions.¹⁾

Thus, the lack of statistical relations between the "normative" and the "descriptive" levels in the PIL study may not be due to technical weaknesses of the investigation itself, although such weaknesses no doubt exist and may explain other peculiarities in the findings. Instead, this disconnectedness may be considered as a very significant feature of the ideological apprehension of educational problems.

Contrary to how the ideology of ideology would have it, both topical levels of analysis concern the ideology of schooling. The ideological apprehension manifests itself in all the results regardless of level of discourse and analysis. That the "normative level" concerns what "ought to be" is im-

1) At this point we could specify the character of a "good" ideological manifesto of the kind we are dealing with here. Thus, a "good" ideology, in terms of its contribution to a working order of reproduction, would verbalize the kind of consciousness that is inherent in alienated educational practice by making explicit a social definition and a plausible legitimation of such practice, thereby serving as a frame of reference for reified conception and discourse within the parameters of prevailing states and their immanent transformation. That is to say that the "good" manifesto is "one step ahead" of the actual transformation of schooling brought about by mechanisms beyond its comprehension. Formally, this is no problem since the ideology takes on the appearance of "normative" statements pointing at the future, but as the consciousness of the policy-makers may be "two steps ahead" certain difficulties may arise. In the present case, the statements are mainly taken from general policy-curricula and they have a character that most likely is too hard to digest for many teachers, let alone many students. Thus, crucial statements of policy are often described as "unrealistic", "wishful thinking", "poetry" etc in relation to corresponding syllabi and experiences of the reality of schooling.

material in relation to the "descriptive level" of critical incidents in teaching, inasmuch as they both take part in the same practical pursuit of the state functions of schooling, in this case in the context of a research undertaking. Certainly, the form of ideology appears in different ways but both are subsumed in the general form and, if so desired, it is possible to label these levels the "ideology of policy" and the "ideology of practice" respectively.

These two appearances of ideology relate to a general problem within the theory of ideology which is not always recognized in Marxist analyses, typically focusing on one of two interrelated issues. Thus, as we have observed before (e.g. chapter 14), ideology may be discussed on two pertinent counts; the intrinsic mystification of consciousness involved in alienated social activity, and the explicit legitimization of capitalist reproduction by the active ideologists. It seems that both these forms are at issue in the present case.

Hence, the "ideology of policy" primarily concerns the apology for and the explicit denial of educational commodification in so many words directed towards the interpretation and advocacy of various de-commodified notions of educational values. The "ideology of practice", on the other hand, pertains to that form of ideology which, while being implicit in the other manifestation, explicates the reification of educational phenomena involved in the fetishized apprehension of educational practice. In effect, therefore, the PIL study concerns the relationship between ideological apology and mystification, between explicit denial and implicit affirmation of alienated educational practice. That the contradictions in this respect are not reconciled may be seen to manifest itself in the lack of empirical relationships in the analysis. Thus, the "levels" appear disconnected since there is no coherent social definition of the practice of schooling that could actually reconcile the conflicting opinions in the crucial sense of bringing this practice under the actual control of united individuals in the pursuit of common ideals.

On the basis of this interpretation, no conscious, deliberately agreed upon relationship may need to exist between the "levels" within the ideology, and indeed cannot exist in the statistical unification of the frames of reference. Practice is controlled by the "natural" forces of commodification, sustained also by the legitimization of these which may be taken as the actual content of the ideology, regardless of its ostensible concern with either policy or practice. Thus, while the levels of analysis, and the "apologetic" and "fetishistic" modalities of ideology in general, may be analytically distinct, they are intrinsically related within the overall function of the

legitimation of educational commodification and the commodity form in general.

As described in some detail in chapter 4, the main results obtained were shortly as follows. At the "policy-level", issues concerning co-operation and the social-emotional development of the pupils appeared as the most important "functions" of teaching, while issues pertaining to pupil differentiation and motivation appeared as the most important tasks at the "practice-level". When adjusted to the purpose of establishing commensurable units of measurements at the different levels, the "social-emotional function" was still found to be the most important at the former level, whereas this "function" appeared as the least important at the latter level. Instead, in the context of the "practice-level", emphasis was placed on issues concerning instructional methods and pupil adjustment to the teaching situation.

Thus, it may seem as if very different issues were brought forward as the most important tasks of teaching, depending upon how these tasks were described. "Very different", that is, if the "policy-level" is apprehended as concerned with the actual pursuit of very desirable ends in terms of educational intercourse and personal development, and the "practice-level" is regarded as concentrating on such ends as imposing teacher defined order, maintaining discipline and an acceptable degree of motivation, and so on. As an inverted reflection of such problems, comprehended as manifestations of educational alienation, the focus of the "policy-level" can be made intelligible, however. That the apology-ideology emphasizes certain de-commodified ideas does not mean that such ideals could possibly be pursued within the existing functioning of schooling, but it is exactly because the empirical condition of actual schooling is what it is that the manifest ideology appears to deny its essential functions.

Both levels of analysis, and both forms of ideology, manifest a preoccupation with the legitimation of the practice of schooling. In the first case, through the apology of commodification by the concern with de-commodified notions of "social-emotional" pupil development and "co-operation". In the other case, through the mystification of alienated educational relationships by the reification of these into a "natural" order, individual or technical-professional, as a basis of pupil motivation and teacher authority, i.e. the carrot and stick of conformity with the commodified standards of educational knowledge and roles.

Thus, it seems that in the case at issue here, a possible reconciliation of the state functions of efficiency and legitimation was approached through a predominant concern with the problem of legitimation as a requisite for efficient reproduction of the processes of educational commodification. The

problems of efficient qualification in terms of specific knowledge and skills were by no means functionally irrelevant, but the mode of their resolution seems to have been approached on the basis that such efficiency presupposes legitimation. This circumstance may be illuminated by a look at some other findings within the study.

Hence, with regard to possible ways of optimally adjusting the teacher's job to the general aims of the school, it was found that the tasks pertaining to "co-operation" and "social-emotional development" were considered as primarily a matter of the teacher's attitudes and allocation of time to these areas, while actual teacher education was seen as better spent training the tasks involved in the "cognitive" and "methodological" areas (see chapter 4). These findings seem to indicate that changes in teacher education should not primarily affect the traditional role of the teacher as the technical-didactic director of the classroom, but this role had to be supported by more appropriate attitudes and dedication as to the "softer" tasks of teaching. In order to maintain efficiency in practical commodification, it seems that it was most important to provide more adequately for the legitimation of these processes.

In order to inquire further into the basic issue of why the state functions of schooling actually seemed to be approached primarily in terms of legitimation in the way indicated above, the theory of the general form of ideology would have to be placed in concrete socio-historical context. For instance, to provide a theoretical account of the fact that the policy-ideology appeared to emphasize certain de-commodified notions of schooling in terms of "co-operation" and "social-emotional development" rather than focusing on the "natural" and "necessary" character of "cognitive" commodification, we would have to consider the specific socio-historical context of the particular study. While the general form of ideology may be seen as "omni-historical" - within the historical scope at issue here - the manifest contents of specific appearances may vary from time to time and from one social location to another. Thus, the circumstance that certain educational issues on the state agenda in the early 70's in Sweden appeared as more pressing than others would have to be comprehended in relation to the character of the practice of schooling in that specific context.

A detailed analysis of this socio-historical context is beyond the scope of the present concerns, but we may point to the possible point of departure to such an analysis in terms of the reconstruction of capital with regard to middle-range business cycles. The PIL study was carried out during the aftermath of vast economic expansion during the time of the establishment of the comprehensive school in Sweden. This aftermath included phenomena like the

so-called student revolt and the extensive questioning of authority and demand for democratization within educational institutions. From this general perspective, it seems reasonable to assume that the findings within the PIL study may be understood as closely related to the apparent necessity to fend off emerging symptoms of a "legitimation crisis", or at least a certain "legitimation deficit" (cf Habermas, 1975), in the Swedish educational system at the time. Hence, the loyalty and support of the system may have been at stake, rather than the efficiency with which the technical qualifications were transmitted, and this circumstance may have decisively influenced the opinions among educational experts which appeared within the PIL study.¹⁾

In conclusion, it seems that the PIL study, as an example of research within the predominant paradigm, may be used as a typical case to elucidate several basic aspects of the ideology of research on teaching. Systematically departing itself from the possibilities of approaching the problems of educational transition and planning for change in a theoretical context which could place idealist speculations in a proper perspective, the study itself may be seen as primarily a manifestation of ideological legitimation. Caught up in the conflicts of educational promise and experience, efficiency and legitimation, ideology and theoretical potential, the study could not pass beyond its own implicit assumption of a normatively based de-commodified form of schooling, which everyone involved in the project might have wished would be true.

1) The hypothesis that manifest educational ideologies may in this way be extremely vulnerable to cycles of capital reconstruction seems to assert itself most glaringly in the fluctuations of the public debate. The position of the pendulum in the current Swedish discussion, as compared with the situation in the early 70's when the PIL study was carried out, may be taken as an illustrative case in this respect. As far as predominant research on teaching is concerned, it seems that this tradition, far from providing a theoretical basis of more fruitful discussions in the external context, has not even been able to reconcile its own paradigmatic wavering between the positions of apprehending schooling now at the "play-level" and then at the "work-level".

18. Some Concluding Considerations and Tentative Propositions

It has been a major theme of this study to inquire into the ways in which the classical issue of the relationship between society and education has become increasingly important as a matter of scientific investigation during the present century. Focusing on the situation in the USA and Sweden, we have observed some aspects of this issue in terms of how the definition of science in the educational context has developed in relation to emerging notions of the "socialized" aims and functions of schooling. It goes without saying that this study has only touched upon some of all the vast and complex problems in this area and, for instance, the pertinent issue of the influence by competing traditions of pedagogical theory and research has not been attended to.

Primarily concerned with the sociological understanding of the predominant paradigm in terms of scientific methodology, the study has neglected or glossed over a number of elements of great importance to any comprehensive picture of even this limited concern, and in particular it may seem as if the historical analysis has been dealt with from the mere point of view of exemplification. Thus, it may need some emphasis here that while the theme of historical evolution has primarily served as a general background to the study of scientific methodology, the position taken by the study certainly involves the affirmation of the historical specificity of the basic features of any scientific paradigm. Consequently, when the crucial issue of educational and pedagogical change is raised, as will be the case in this chapter, it should be understood that we consider the possibilities and conditions in this respect to be fundamentally determined by the historical transition of the essential features of contemporary society.

As importantly, however, this position does not imply that social change, within education or any other institution, is considered a matter of some "natural" evolution, and that all we can do is to wait for certain objective conditions to appear. Such a reified notion of socio-historical determina-

tion would have none but ideological significance, and it is absurd from the standpoint of dialectics. In general, we firmly believe that ideological distortions, whatever their structural bases, will only then finally become obsolete "when the practical relations of every-day life offer to man none but perfectly intelligible and reasonable relations with regard to this fellowmen and to Nature".¹⁾ However, we equally firmly believe that it is the task of men and women to develop those forms of social intercourse in which this ideal may really be pursued, and in terms of which it is evident that "it is essential to educate the educator himself".²⁾ In order to pursue a commitment to social change on the basis of this position, there can be no turning back from the stipulation that each and everyone is engaged, however inadvertently or contrary to appearance, in the quest for a potential future of ideological distinction. As far as pedagogical theory and research are concerned, there can be no retreat from the affirmation of the ideological significance of any methodological posture, however "basic" or mute as to explicit stands to the potential change of the "facts" of its concern.

Of course, there is nothing remarkable about the problem of educational change being raised here as an issue of central concern to pedagogical theory and research. This may rather be taken as an actual distinguishing feature of predominant research itself, and we have observed a number of instances in which this concern manifests itself in the tradition of research on teaching. However, while the interest of the predominant paradigm is centered on educational change in terms of the internal lawfulness of individual development, learning, etc, the present discussion will continue its preoccupation with social structure as a basic focus of inquiry. Thus, we will change our point of departure from the analysis of pedagogy as an element of social reproduction to its analysis in terms of a dialectical theory of social change. In so doing, we will attempt to illuminate some of the aspects in which the predominant paradigm is unable to cope with educational change in any radical meaning of this term, and try to demonstrate some ways in which the further development of pedagogy could pass beyond its mere reproductive functions.

One ambition of this study has been to develop a theoretical framework for the fruitful recognition of the reciprocity of a scientific paradigm and social structure. In the pursuit of this ambition, the study has partly focused on traditional forms of theory and research, which may in some respects lack the sophistication of contemporary efforts, on the assumption that cer-

1) Marx, Capital, 1972, p 223.

2) Marx, Theses on Feuerbach, 1972, p 108.

tain features may manifest themselves more clearly when seen from a distance, thereby revealing parallel features hidden in later approaches. This is the case, we maintain, with regard to the early excessiveness of "scientific management" and social engineering within education, in the sense that while some strategic notions of the scientific task may have changed since that time, others remain as significant features of contemporary pedagogy. This may be shown, as we have tried to do, by tracing persistent elements in theoretical and methodical outlooks which still seem to dominate the paradigm at issue.

Thus, the present study has argued that the predominant pedagogical paradigm may be epitomized at a general level by its inclination towards functionalist sociology and behaviourist psychology, more or less pronounced within different sections and at different times of its development. However, in order to appreciate the character and implications of this inclination in various instances, as well as its unquestionable gain in sophistication in later theory and research, we should also consider the functional context of the paradigm's development. The internal evolution of the paradigm, that is to say, should be seen in relation to the transformation of society at large, and thus to the contextual imperatives and potentials of theory and research. It is on this basis, we would suggest, that the philosophy and methodology of the paradigm may possibly be understood in a manner, which is not confined to mere idealist notions of its theoretical and normative purposes.

Therefore, what is really at stake in an analysis of this sort is not just the specific features of limited manifestations of a social activity called scientific, but also the very basis of such activity within a society called capitalist. In pursuing such an analysis, it may be a fruitful hypothesis that dominant models of theory and research will in significant respects conceal the essential structures of society, so long as this context remains unaltered in terms of these very structures. This functional point of departure may provide an important basis of inquiry, but to avoid the pitfalls of structural-functionalism, it seems as important to integrate this point of departure in a dialectical context. In the following, we will discuss some possibilities connected to such an attempt to theorize the dialectics of pedagogy and society.

Considered in the previous analysis of educational and pedagogical reproduction, the concept of autonomy may take on a crucial significance in the context of scientific contributions to social change. However, while idealist notions of science may imply that its social autonomy is absolute, in the sense that science is taken to develop on the basis of its own inherent

nature, a dialectical theory will contend that scientific inquiry has to be apprehended in relation to the essential character of society as a whole, i.e. that the autonomy of science is relative to the prevailing form of production and reproduction. Thus, the concept of relative autonomy does not simply pertain to the "degree of freedom" of the system under consideration, which is a rather speculative mode of posing the issue, but the basic question concerns how and in which sense the system relates to the totality of capitalist society.

We have tried to argue throughout the present analysis that the relationship of schooling and research within the state to society as a whole is determined by the form of ideology. Education and pedagogy relate ideologically to the mode of production, and the concept of autonomy therefore has to be comprehended in terms of the autonomy of ideological structures. In this theoretical move, the abstract notions of freedom and independence are displaced by the concrete point of departure that the character of education and pedagogy is defined by reasons of ideology. The present problem then turns into the question of how to theorize this form of ideological autonomy as a matter of social change.

After all, ideology is not a mechanical determination, but a dialectical relationship in which the "given" somehow has to be "taken", and the autonomy of pedagogy is thus also a matter of how the "functional imperatives" of capitalist reproduction are apprehended by the research apparatus itself. Autonomy in a social context is first and foremost a practical problem, and as a social function it is a consequence of the "material" conflict of power and control. As a theoretical issue, the autonomy of education and pedagogy may thus be seen to assert itself in relation to those ideological forms "in which men become conscious of this conflict and fight it out" (Marx, 1859 Preface, 1976, p 4).

On the basis of the analysis in previous chapters of this study, we may infer that the autonomy of research manifests itself in the form by which the functions of efficiency and legitimation are pursued. The efforts of the research apparatus to provide for these functions in the processes of educational commodification are constituted, we now suggest, by the framework of the historical transformation of capitalist schooling in which the autonomy of research asserts itself. Specifically, we would argue that the historical content of research, which signifies the substance of its autonomy, is conditioned by the form in which the contradictions of these functions appear within research in the course of capitalist reproduction. The attempt to reconcile or counteract the manifestations of these contradictions will, in other words, be discussed here as carried out in the forms of ideology in

which the autonomy of the apparatus is instituted and, furthermore, through which this autonomy is advanced by theory and research.¹⁾

The argument that certain aspects of the methodology of the predominant paradigm, and its socio-historical transition, may be fruitfully understood on the basis of the structural transformation of schooling in terms of efficient and legitimate reproduction of the commodity form, presupposes an analysis of how this object of research may transit from one appearance to another. In other words, the character of the state activities at issue, i.e. schooling and research on schooling, will have to be comprehended in terms of their interrelations. Therefore, while a detailed account for the "nature" of schooling under capitalism is beyond the scope of this particular study, some general features should be observed here, even if only in a tentative fashion remaining in great need of further specification. Thus, to establish a framework for the following discussion of pedagogical change, we will suggest a general hypothesis as to the socio-historical transformation of educational structures.

18.1 On The Transformation of Schooling

When we infer that educational reproduction involves commodification (cf chapter 15), we have to consider the fact that the alienation of such commodification is not the same thing as the alienation of commodity production within the economic structure. While the ideology of alienated practice, as an economic activity, may be thought of as immediate, in the sense that the fetishism of commodities develops as an inherent aspect of the reproduction of alienated capital, institutional practice within the state is undoubtedly of a different order. Here, social activity is mediated by the form of ideology itself, in the sense that there is no "necessary" or "natural" re-

1) Moreover, we would propose that the efforts to reconcile the contradictions involved in the state functions of schooling define the manifest content of educational commodification. Thus, the concept of educational commodification may be specified in terms of the evolving character of educational "outcome", as defined by the reified systems of psychology, sociology and epistemology, i.e. the operational definition of homo discipulus in terms of the individual's relation to reified knowledge and social roles.

lation between forms of alienation and mystification. Whereas in the economy the facts of alienation appear as objectively conditioned by the imperatives of the extraction of surplus-value, state alienation is contingent upon the ideological apprehension of such facts. Thus, mediated by the various manifestations of the fetishism of commodities that appear within the state apparatuses, their alienated practices take on their distinguishing features. Of course, the dialectics of alienation and mystification will have to be taken into account also within the state, but while alienated practice is the prime determinant within direct economic production (and in the "final analysis" within the state), the analysis of the state may, we would suggest, proceed from the hypothesis that fetishized apprehension of the basic commodity form is primary in this context and thus at the center of the inquiry into institutional forms of practice.

This may seem like an odd recapture of idealism, but this is not the case, insofar as the ultimate dependence upon the accumulation process is acknowledged and, more importantly here, since we do not approach the state from the standpoint of individual units but of social structure. In the former perspective, it seems that the priority of alienated practices will have to be accepted, but in considering the class character of the state we may maintain that its domination is exercised primarily through the reproduction of ideological modes of understanding the essential features of the prevailing mode of production.

Within the state apparatus of schooling, consequently, a particular relationship may be assumed to prevail between the unified tasks of providing for student qualification and the reproduction of the class relations of production. Thus, we may argue that the former task is mediated by the latter, in the sense that the specific educational qualifications are framed in the mystification of the commodity form. Educational modes of alienation, i.e. the reproduction of reified knowledge, skills and social roles apparently without authors; past schooling confronting the student as an independent power manifest in grades, labels, ossified roles, etc; methods of teaching and other technical procedures making use of the students rather than the other way around; all such ingredients in the students' reproduction of those abstract conditions that dominate them, may be seen to take on their specific appearances as a consequence of the ideological mystifications with which the educational practices are infused. Hence, from this point of view, the explicit features of state schooling, its "objectives" and "methods", are but appearances of the essential content which pertains to the basic mystification of the commodity form.

Since it is the fetishism of commodities, under its various educational

disguises, which may be taken as the direct function of schooling rather than the extraction of surplus-value, and since the forms of alienation thus differ between the structures of educational commodification and commodity production in the economy, the issue of educational efficiency becomes problematical. Whether schooling is indirectly productive in terms of the expansion of surplus-value cannot be taken for granted theoretically as a matter of specific technical qualifications, but it is, in principle, an empirical question. It is no doubt the aim of state policy formation to enhance the productivity of the schooled labour power, but the promotion of efficiency in this respect is certainly a troublesome endeavour, as we have seen.

Since there are no substantive criteria of effectiveness within schooling but, on the contrary, only ideological, success can only be hoped for in policy-making within the form of direct provision for the fetishism. Efficient reproduction of the specific appearances of indirectly productive qualifications is thus merely a possibility, while the mystification of the basic commodity form may be taken for granted as an intrinsic aspects of ideological reproduction.

Furthermore, during the course of capitalist advancement, the state has to face a growing ambiguity in its efforts to promote efficient programs of schooling. The general growth of the state itself, the "de-skilling" of the labour force due to a perceived lack of productivity gains through investment in variable capital, the accelerated tendency of specific qualifications to become obsolete, and other phenomena involved in this advancement do not enhance the feasibility of efficient educational adjustment to the accumulation processes. On the contrary, they point to the increasing complexity of the processes of reproduction and the likely decline of efficiency in the pursuit of any specific programs of qualification intended to meet the functional requirements.

Thus, it seems that the problem of efficiency within schooling may be better stated in terms of a function of reduced inefficiency. In this sense, we may consider particular qualifications as functional to the accumulation processes in so far as they prevent inefficiency by avoiding threats to productivity gains in the economy. Since the state is unable, except under limited conditions, to enforce any other standards of efficiency than those appearing within the form of ideology, schooling may thus be apprehended as a matter of approaching improvements in relative inefficiency. The character of the ideological autonomy of the state apparatus therefore asserts itself in its ability to define and implement measures with the purpose of fending off symptoms of inefficiency within the framework of the extended reproduc-

tion of capital.

With this background of framing the issue of the contradictions between efficiency and legitimation, we may reformulate its critical potential in terms of the functions of inefficiency and mystification. On this basis, we will propose that the transformation of schooling may be fruitfully comprehended in view of the following considerations. On the one hand, there seems to be an increasing tendency towards the mere avoidance of dysfunctional inefficiency, at the expense of the more clear-cut pursuit of such technical qualifications, which may be efficiently related to a particular structure of roles and occupations. On the other hand, there seems to be an increasing tendency of implicit mystification of the commodity form to gain in significance, at the expense of explicit forms of legitimation by means of apologetic ideology and the actual and prospective redistribution of material benefits. This is to say, that growing conflicts may appear between explicit reproductive qualification, sustained by material and symbolical modes of manifest legitimation, and a more concealed form of reproduction, increasingly dependent upon the implicit legitimation involved in the mystified understanding of the basic commodity form of educational practice. Granted that the functional significance of explicit modes of legitimation may fluctuate with business cycles, and that economic crisis and vast unemployment may breed a greater susceptibility to such efforts, long-term accumulation crisis is likely to undermine the bases of legitimation by material outcome and apologetic rhetoric. If such forms of legitimation become decreasingly efficient as a means of maintaining the requirement of alienated commodification, such maintenance may increasingly have to rely on the appearance of processes of schooling, which may seem to oppose any characterization in terms of capitalist reproduction. On the basis of these general considerations, we will venture the following hypothesis as to the transformation of schooling: There is an increasing tendency towards the placing of schooling in productive correspondence with its economic foundation in and by the appearance of such practices of schooling, which appear to deny the essential features of educational commodification.¹⁾

In sum and as far as the analysis of schooling is concerned, we thus propose that as the contradictions inherent to the capitalist mode of production proceed, the functional requirements of implicit legitimation of its

1) As far as the analysis of classroom practices is concerned, the work by Bernstein may provide insight into fruitful modes of apprehending these processes of immanent transformation. Thus, in our reading, the movement from "collection codes" to "integrated codes" (1971) and towards "invisible pedagogies" (1975) relates interestingly to implications by the present hypothesis.

essential character grow in significance. This tendency will manifest itself in the increasing weight of the mystification of the commodity form at the expense of the relative importance of the pursuit of such specific qualifications, which may be functional to a particular appearance of the stratification of labour. Practical skills and knowledge pertaining to the efficient performance of roles in a certain hierarchy will loose in significance in favour of abstract principles of teachability, flexibility, endurance of ambiguity and social impotency, "rationalization" of experience, and so on, under the general requirement for a penetrating mystification and lack of comprehension of the commodity form. Educational efficiency becomes a matter of legitimation rather than of the technical maintenance of the processes of reproduction, and the educational apparatus becomes increasingly important as a directly productive form of carrying the growing burden of the indirectly "productive" content of mystification.

However, the lack of substantive criteria of efficiency within schooling, and the indeterminate character of its qualification processes in relation to the reproduction of capital, may be considered from another point of departure. The ideological functioning of schooling not only means that its commodification processes may manifest themselves in a variety of alienated structures as a matter of functional accommodation. It also means that educational commodification processes may be susceptible to critical opportunities in another sense than in the basic economic structure. The ideological mediation between schooling and the commodity form not only implies the feasibility of flexible modes of indirect commodification but also the possibility of a critical questioning of prevailing notions of efficiency in the context of this mediation.

For instance, as an inference from the general hypothesis above we may suggest that the hierarchical structuring of educational outcome is losing in significance in favour of the overall mystification of the commodity form, regardless of the specific appearances of the social division of labour. Although it seems that the class character of schooling may be pushed further into obscurity in this movement, it also seems that such a development of schooling is likely to concern the interests of different social groups in such a way that certain critical issues may have to be raised on the state agenda. In this process, the ideological autonomy of schooling may provide certain possibilities in terms of the politics of change.

The development of the internal autonomy of scientific theory and research may be considered in this light. Such autonomy may be regarded as not just a matter of course but as crucially related to the actual methodological affirmation or negation of the reduction of science to ideology

within the practical pursuit of pedagogical knowledge. In view of the concluding discussion of pedagogical change in these terms, we will consider the development of pedagogical technology in relation to the hypothesis stated above concerning the transformation of schooling.

18.2 On the Crisis of Pedagogical Technology

In the discussion of the state functions of research on teaching in chapter 15, we concluded that the pursuit of technological efficiency and interpretive legitimation may be understood as carried out simultaneously by a single, albeit complex, methodological move; reification. Thus, the pivotal place in the present theory of ideological research is occupied by the concept of reification, and we have focused upon the problem of the methodological reification of social structure within the predominant paradigm. Now we will suggest that the concept of reification may also provide a basic analytical tool for the understanding of the evolution of research on teaching in the context of the contradictions involved in the state functions of schooling. Hence, in trying to illuminate some aspects of this process, we will proceed from the consideration that traditional research on teaching in general seems to have relied on methodological reification in order to advance both functions.

As described in chapters 10 and 11, reification seems to have been a basic stipulation in the efforts to provide for "understanding, prediction and control" of the phenomena of teaching. Conceptual reification, as the form of definition of how "things really are", thus seems to have constituted a basis for the analysis of the feasibility of technological control and for the legitimation of the processes within which this is to take place. In short, it seems that the two functions have developed in a certain harmony, insofar as reification has represented both the interpretive point of departure and the technological ends-in-view of research. Our hypothesis at this point will be that this smooth way of attempting to reconcile the contradictions of the state functions has become increasingly hard to maintain. As educational commodification comes to stress the reification of consciousness, regardless of the exchange-values of the specific types of knowledge and skills that are transmitted, the predominant technology may have to see

its basic assumptions undermined.

It seems that the predominant paradigm is caught up in the following contradiction in its efforts to provide for technological efficiency and interpretive legitimation. A viable technology of teaching presupposes the validity of the stipulation of reification, in the sense that the feasibility of external control of commodification processes depends of the prevalence of reified rules of educational legitimation. In other words, technological efficiency presupposes the interpretive legitimation of reification, insofar as physical repression and legitimation by outcome are becoming increasingly difficult to maintain as vehicles of reproduction. However, while efficiency thus builds on reified conceptions as to the "natural" and "necessary" character of the alienated form of reproduction, research based on this stipulation may in fact come to undermine this very condition. This may occur in that such research - in its technological pursuit of efficiency gains due to improved adjustment of the means to the ends - will have to continuously elaborate upon the socially contingent and "artificial" character of its central phenomena. As the technological possibility of "prediction and control" increases on account of a growing need and capacity to consider the social conditions of such technology, the potential of a fundamental questioning of the reified notions also increases, and the feasibility of interpretive legitimation by reified "understanding" declines. Thus, the emergence of more efficient social technologies may actually entail the erosion of the very foundation of their viability in terms of the social mystifications on which they are based. In this sense, the predominant paradigm implies the possibility of what could be called a "science crisis" in that the contradiction inheres to a scientific methodology, which tends to destroy the very premises of its own reproduction.¹⁾

To account for the empirical fact of the persistence of the predominant paradigm, we will primarily have to inquire into its functional relations to the processes of legitimation, which seem to constitute an increasingly significant feature of schooling. The social definition of science and technology in the pedagogical context will have to be considered as a matter of legitimation rather than efficiency or, better phrased, as a matter of efficiency in terms of legitimation. Thus, the explicit aim of providing for technological efficiency within teaching, although only modestly carried through ostentatiously, may be taken as highly relevant to the reproduction of the legitimating rules of schooling. In effect, we would suggest, re-

1) The analyses by Habermas (1975) and Offe (1975b) of the contradictions of state functioning may illuminate this argument.

search promotes legitimation by appearing to promote efficiency, and the very feature of methodological reification, which seems to have proven itself impotent in the latter sense, may be taken as the very medium of efficient functioning in the former.

This mode of functioning thus tries to counteract the contradiction between efficiency and legitimation in a rather peculiar way. While efficiency, in terms of the technology of educational commodification, has so far not been promoted to any major degree by the methodology having this manifest aim, legitimation has, and that by means of the reproduction of reified interpretations, which may appear as unrelated to the pursuit of this aim. In order to reproduce itself, this mode of functioning may have to reflect the actual transformation of schooling and, consequently, somehow correspond to a situation in which efficient commodification is increasingly becoming a matter of legitimation. In other words, the development of the functional character of predominant research is comprehensible in relation to a practice of schooling in which the reproduction of the commodity form is increasingly conditioned by the legitimation of the social relations of production rather than by the efficiency of the "technical" qualification of labour power.

Indeed, as observed above, such a hypothesis may be corroborated by a number of indications, more pervasive with time and the extension of elementary schooling, making for the domination of the function of legitimation at the expense of the establishment of technological efficiency in educational transmission "proper", say concerning the three R's. In effect, the contributions by predominant research to knowledge in the latter sense may on this particular basis even be considered as negative, insofar as the enormous internal inefficiency, which seems to characterize the contemporary qualification processes of schooling, remains unchallenged as to its social foundation by the uncritical research functioning by ideology.

The ideological form taken by predominant research may in some cases, and under limited conditions, provide for an adequate technological management of the appearing "problems" of schooling, but the basic contradictions involved in the reproduction of the commodity form cannot be comprehended. With the accelerated transformation of capitalism, moreover, the technological model of steering and control seems to become increasingly inadequate. Its fundamental stipulations are overrun by the course of development of "things", i.e. the "natural" and uncomprehended evolution of capitalist accumulation processes, and the meaning of pedagogical technology may thus also have to change to accommodate to the transition of educational commodification.

It seems that the technological notions of efficiency become fetishized in a more pervasive way in that the ends cannot justify the means. Mystification cannot be explicitly legitimated like "technical" qualifications, and instead the means turn into ends in themselves. Since pedagogical technology cannot aspire for efficiency in the reproduction of explicit "objectives", in any particular case tending to be either obsolete or lacking in legitimation, it may only hope to reproduce itself by providing a substitute for the critical comprehension of the capitalist character of schooling. Thus, the technological model changes its meaning from being a tool for explicit efficiency in educational reproduction to becoming a functional content in terms of mystified interpretations of educational reality. The persistence of technological notions in research on teaching, despite their acknowledged impotence in reaching the manifest aims, could be seen in this light.

However, the contradictory character of the basic methodological strategy maintained by the predominant paradigm manifests itself in a number of dilemmas, in the resolution of which the paradigm seems to have growing difficulties in sustaining even its internal legitimacy. Denunciation of "technology" and "statistics" is almost becoming a commonplace and the interest in "softer" approaches to educational problems seems to be growing, as witness the gain of ground during the 70's of methodological outlooks like phenomenology, hermeneutics, ethnomethodology, and in general what Bellack (1978) aptly calls the "interpretive ideology". For all their affirmation of the predominant paradigm's inability to disclose essential educational problems, however, these approaches seem to have little to offer in terms of the explanation, and thus the conditions of change, of what they oppose. In so far as such outlooks are not integrated with a fruitful understanding of the historical specificity of the capitalist mode of production, moreover, the "interpretations" offered, although possibly most interesting within their own contexts, will remain at the level of appearances. Thus, while the gain in significance of these outlooks no doubt challenges the legitimacy of the predominant paradigm, they have to be considered also in terms of the further adjustments within the paradigm itself to the evolving requirements of legitimation.

Nonetheless, the emergent crisis of pedagogical technology seems to manifest itself with increasing intensity. The radical variants are often considered obsolete and while latent notions of technological control may lure in the "softer" approaches, the methodological basis of reification, whether in its psychological, sociological or epistemological appearances, is frequently called into question. The ideological character of the predominant

paradigm is more and more brought into the open, also by research itself, and its legitimacy erodes through the working out of its inherent contradictions. Functional to educational commodification as it may be, the reified technology cannot be sustained in the long run by scientific forms of theory and research which are forced by these contradictions to pursue an autonomy beyond capitalist production rules. That reification eventually will have to give way to reason is thus no mere utopian hope but a hypothesis in accordance with dialectical theory of the basic character of the prevailing form of production and reproduction.

The development of scientific autonomy may be seen to proceed from within the form of ideology itself and, as Marx (1972, p 9) put it, new principles to the world will have to be developed out of its own principles. To conclude this study, we will point in a tentative manner to some possibilities in this respect within the general framework of analysis and synthesis developed in the earlier sections. Thus, we will consider, although in rather summary terms, how the predominant paradigm may be critically reconstructed on the basis of its own premises, and how such a reconstruction would constitute a new form of pedagogy emerging out of an old one. In so doing, we will have the opportunity to bring to the fore some aspects of the present study which so far have been kept latent and discuss some methodological features of this latency in general.

18.3 On the Negation of Pedagogical Reproduction

In this concluding discussion, we will focus upon some possibilities of pedagogical development and change on the basis of the previous explanatory reconstruction of the predominant paradigm. Since the purpose here is to round off the present study, rather than to consider the wide range of pertinent issues that could constitute the substance of another study, the discussion will be restricted to some general comments on the sense in which an outline of a critical pedagogy may be seen as implied in the theory of ideology presented in the earlier sections. Hence, it should be emphasized that the following discussion merely represents a summary view of some of the implications related to the main line of analysis in this study and that a number of crucial features of a critical methodology within pedagogy will

remain to be considered in a wider context.

The sociological reduction involved in the explanatory reconstruction has concerned the negation of the internal autonomy of science in order to explore the general hypothesis that the paradigmatic conditions of scientific production may be fruitfully apprehended in the context of social reproduction. Thus, we have primarily been concerned with the formulation of a theory of pedagogical reproduction as a social phenomenon. Within the present framework of a critical reconstruction of the predominant paradigm, this negation of internal autonomy will itself be negated in an effort to theorize the possibilities of scientific production beyond the reduction to social reproduction.

In this sense, the topical negation of the original negation does not mean that we will "return to the positive", as conventional logic might want to have it, but it means that we proceed to a state in which the very meaning of internal autonomy has changed on account of the theoretical potentials provided by the analysis of the nature of "external determination". Therefore, the negation of the negation implies a movement from the abstract towards the concrete; from the abstract notion of scientific autonomy "in principle" to the more concrete apprehension of such autonomy in the specific context of the theory of ideology.

Correspondingly, we have in the process of this study passed from the abstract or "pseudo-concrete" description of scientific methodology in Parts I and II to the more concrete framework within Part III in which this methodology has been discussed in specific respects within a theoretical "totality of many determinations and relations" and in a certain "unity of the diverse" (Marx, Grundrisse, 1977, pp 100, 101).¹⁾ However, the abstraction of the theory of reproduction may be seen to prevail so long as it is not integrated with a theory of change. In the following, we will thus consider some general aspects of the dialectics of pedagogical reproduction and change.

In trying to elucidate some pertinent issues within the complex context of the evolution of internal autonomy as a matter of scientific methodology, we will make an analytical distinction between ideological and critical theoretical practices of research.²⁾ Not intended merely to provide a

1) The concept of the pseudo-concrete has been elaborated by Kosik (1976) in the context of a philosophy of praxis. For a discussion of the Marxian use of the concepts of abstract and concrete in the general context of the production process of knowledge, see e.g. Israel (1979).

2) Although not drawn upon in the present discussion, an essay by Althusser (1969) on the materialist dialectic discusses the production of knowledge in terms of ideological and theoretical practices of science.

rationale for the classification of specific pieces of research, the discussion of these forms of scientific practice may be taken as an effort towards their comprehension as two opposites within a dialectical totality. Focusing on the intrinsic relationships between these forms, we will thus consider their dialectical tension within the totality as the moving principle of analysis. Within this framework, we will try to sketch the outline of a critical theory of pedagogical theory and research in which the understanding of the form of ideology also serves as a basis for the comprehension of scientific methodology in terms of pedagogical change.

In the last of his theses on Feuerbach, Marx (1972, p 109) states that while philosophers have only interpreted the world, the point is to change it. This thesis is certainly often quoted, but it is perhaps more seldom grasped in concrete context. While even some Marxists seem to have understood the thesis as an affirmation of the general futility of all philosophy, thereby efficiently precluding any recognition of its critical potentials in the transformation of the world, we will attempt to make sense of some of the pertinent implications with regard to the distinction above.

To make the thesis intelligible in this context, we have first of all to realize that Marx's topical concern with philosophy, and left-Hegelian "materialism" in particular, pertains to the "change" as well as the "interpretation". The critical issue then turns into the question of how philosophy could possibly be seen to "change the world", i.e. a world characterized by the preponderance of the capitalist mode of production.

The general issue in these notes of Marx relates to the problem of socio-human practice, and in particular the issue may be seen to concern the possibility of the transcendence of alienation in and by the practical pursuit of socio-human essence.¹⁾ However, in so far as the realization of socio-human essence involves the transcendence of capitalist modes of alienation, it seems that a fruitful concept of alienation will primarily have to refer to its later developments in Marx's writings in terms of the historical specificity of social relationships within the commodity form. From this point of departure, the concept of socio-human essence may be considered as a basic dialectical principle of negation in the context of scientific theory and research.

Since we understand the "positive" facts of ideology as the negativity of socio-human essence, and the reproduction of ideological practice as a manifestation of alienation, the present conception of theory emerges out of

1) See e.g. Marcuse (1969) on the history and philosophy of the concept of essence.

the comprehension of the negation of such negativity within the framework of the scientific endeavour. In a very precise sense, therefore, the formation of critical theory concerns the transcendence of ideology in the dialectical move of the negation of the negation. Far from pertaining to the mere condemnation of established forms of social intercourse, the concept of negation thus refers to the dialectical framework in which fact and potentiality, alienation and the realization of socio-human essence, social reproduction and change, are grasped as the unification of opposites.¹⁾

To "change the world", rather than to engage in the "contemplative interpretation" of ideology, critical theoretical practice will thus attempt to pursue knowledge of social reality in a form in which the reproduction of its empirical appearance and its change constitute two sides of a dialectical totality. Within our topical concerns, the issue pertains to the possibility of theorizing the formation of scientific theory as the negation of the ideological practice of research.

In this context, the problem of epistemology turns into a practical issue, insofar as the theory of empirical reality essentially concerns the realization of its principle of negation. Having transcended the mere empiricism of ideological notions of scientific theory - and its reified conceptions of the "objective facts out there" - critical theory may maintain that the validity of scientific knowledge is a practical question to be settled as such in the pursuit of socio-human ideals in the transformation of the world. Hence, the validity of scientific knowledge may be taken as essentially a question of fruitfulness in the process of social transition, and a critical epistemology will thus basically concern the relationships between knowledge and the knower as a matter of the transformation of the social facts in accordance with a theory of these facts in which theory spells social change.

In this sense, theoretical practice may attempt to formulate knowledge in such a way that the social facts and their critical negation may be understood in terms of the realization of the theory as an active intervention in the transition of the phenomena towards the theoretical proposals in terms of socio-human essence. Hence, such scientific practice involves the explicit affirmation of the ideological significance of any methodological posture within the basic dialectics of theory and ideology.

1) Correspondingly, critical analysis may be defined here in terms of the investigation of the negation of the negation, in any particular case, as distinct from that kind of criticism which merely "knows how to judge and condemn the present" (Marx, Capital I, 1967, p 505). In this sense, we may add, it is not the critical theorist who personifies "negativism" and "pessimism", but the ideologist.

In order to proceed towards a concrete grasp of the predominant paradigm, and its potentials in terms of pedagogical change, we may first observe that in so far as the dialectical totality may actually be comprehended within the previously discussed theory of ideology, the topical theory of critical theory is already presenting itself, and in so far as the dialectics may actually be comprehended in the theory of reproduction, the theory of change is already under way. Thus, we emphasize again that the present concerns are with the explication of the character of critical inquiry in terms of its previous latency. Taking the earlier analysis of social reproduction within the prevailing social formation to provide a necessary basis for theoretical deliberations beyond mere idealist speculation, we may initiate the positive statement of a critical methodology.

In chapter 8, we described the abstract appearance of the predominant paradigm in terms of its nomothetic, technical and normative features and, in chapter 16, we argued that these features may be understood, within the theory of ideology, as objectivism, neutralism and idealism respectively. Being at present concerned with the negation of the ideological practice of research, we may begin to probe the capacity of the latter concepts to act as critical concepts in the very sense that they contain their own negations.¹⁾

The objectivism of the ideological practice basically pertains to the effort to posit the reified apprehension of alienated appearances as equating scientific objectivity. As Marx remarks in the Eighteenth Brumaire, "men" do not make history just as they please, but they nevertheless make their own history. This circumstance appears in ideology in a form, which takes the capitalist mode of production to be final, and there seems to be no way out of the situation in which "the tradition of all the dead generations weights like a nightmare on the brain of the living" (Marx, 1972, p 437). The scientific quest for objectivity is thus transformed into a pursuit of reproductive interpretations of the "positive" facts within a state of society which essentially negates socio-human potentials beyond prevailing production rules.

In order to transcend ideological objectivism, it seems that a critical pedagogy will have to direct basic attention to the subject-object dialectics with regard to social structure and human knowledge. The latter aspect is touched upon below and, as far as the former aspect is concerned, we may

1) While, for instance, Marcuse might have argued that a critical concept, like a "materialist" in his terms, contains "an accusation and an imperative" (1969, p 86), we would take the more modest position of suggesting that it contains a fact and a proposition.

propose, in the first place, that the subjectivism of idealist negotiation, which is predominantly coupled mechanically with the objectivism, will have to be reconsidered in view of an analysis of the actual historical forces of contemporary society. This means, in its turn, that the problem of social classes is brought to the fore of the inquiry and that the displacement of ideology, in any particular case, will have to be theorized against the background of the prevailing commodity form. Thus, the theoretical negation of objectivism does not involve any attempt to disregard the apparent objectivity of centralized social structures, according to this view, but it involves the theoretical comprehension of alienation as an inherent feature of a class society in transition.

In the analysis of this process, pedagogical theory will be in constant need of a critical re-evaluation of predominant modes of class analysis, taking into account, for instance, the complex context of the evolution of basic crisis phenomena, the growth of state intervention, and the decentralized efforts towards social reconstruction. Thus, while the objectivist methodology will remain one-sided and socially biased - whatever its degree of technical rigour and sophistication - so long as the reified foundation is sustained, dialectical theory may build on the recognition of the emergent character of actual "nomothetic" knowledge as essentially based in the very quest for democracy beyond the mere nomos of prevailing appearances.

From the standpoint of critical theory, the technical "neutrality" of ideological research may be seen to manifest itself as a faded neutralism towards the various agents of social control which may appear within the prevailing structure. The negation of this form may explicitly affirm the socio-historical specificity of empirical relations of domination and thus open up the possibility of an extended neutrality towards the appearing facts of the social order. The pedagogical knowledge pursued may then take an evolving form, which may possibly contain an approach to the realization of a historical content of production and reproduction which is not confined to the functions of alienated technologies. Hence, in general apprehending the social facts on the basis of an analysis of their essential conditions of transition and change, dialectical theory, as discussed here, has nothing to do with the mere circulation of social elites, since the transcendence of capitalist domination concerns all classes and thus also the capitalist's domination by a social formation "whose creature he socially remains".¹⁾

The technological notions that seem to dominate within research on teaching may be seen as manifesting themselves as an implicit concern with the

1) Marx, Preface to the First German Edition of Capital, 1972, p 194.

extended reproduction of alienated techniques of social control. Presenting itself as "value-free" on the basis of the objectivist methodology, in relation to which the alienation of all individual units of social practice may be pseudo-validly stipulated, the "scientific neutrality" within pedagogy may in fact be regarded as a subordination to the structural forces of capitalist transformation and a retreat to the superficial problems of "natural" individual development. The negation of this resigned negation of socio-human potentials to engage in the recreation of the world, therefore, may aim at the restoration of the dialectical framework in which "individual action" and "role behaviour" may eventually be fruitfully comprehended in terms of social change. Likewise, the pedagogical interest in individual differences may in this perspective assert itself as a concern with the substance of educational change, rather than as the mere elaboration of social technologies of conformity.

Furthermore, as far as a critical pedagogy is concerned, we may state at this point that the overcoming of the ideological form of predominant technology will necessarily involve the abolition of those reified modes of epistemology in which knowledge is apprehended as a mere commodified thing. This may occur through the taking up of the challenge to develop a fruitful form of dialectical epistemology within pedagogy in which knowledge is positively apprehended as a relationship between the individual, as a social being, and the cultures of society.

The explicit, albeit abstract, aim of research on teaching to provide for "understanding, prediction and control" may be critically grasped in the context of the negation of reified technology. In its confinement to the realm of appearances, the pursuit of this aim basically seems to entail the "contemplative interpretation" of allegedly neutral facts and the establishment of technological means of reproduction of such - "internally lawful" - facticities. The ideological character of this notion of the scientific task may be elucidated from the standpoint of critical theory in that the form of such "understanding" is unmasked as inherently related to the mystification of the essential features of the commodity form, while the nature of "prediction and control" is comprehended in terms of social domination within the framework of the alienated reproduction of this basic form.

From the point of departure of a dialectical theory dedicated to social change, the placing in proper perspective of the reified aim of "understanding, prediction and control" may provide for a critical reconceptualization of the pedagogical intent. Thus, the transgression of reification asserts itself in the practical meaning of the realization of theory, as distinct from the empiricist notion of "application". The purpose of theory

may in this sense be seen to evolve from the consideration of how ideology systematically negates socio-human potentials of conscious activity beyond capitalist reproduction, and how a critical orientation may try to open up the theoretical possibilities of change and attempt to demonstrate how practical change is in fact feasible. Hence, the critical "understanding" of a theory of change may concern that very different form of "prediction and control" which pertains to social planning and emancipation with regard to the transition of the commodity form.

While the technological aim of the predominant paradigm thus involves an effort to extract principles of reproduction from within the essential parameters of the prevailing mode of production, dialectical theory may apprehend these parameters themselves as basic constituents of the pedagogical problem and approach the totality - the presence and transition of the capitalist social formation - as a point of departure within pedagogical analysis. This is to say that the feasibility of pedagogical explanation and change, as two aspects of a common problem situation, may build on the theoretical potential of embracing the totality of which education is a part in such a way that the practical potential of education in the transition of this totality is fruitfully laid bare. In this way, a critical conception of the real possibility of educational change could eventually enter pedagogical theory in order to transcend the predominant idealism as well as the mechanical notions of social determination within certain forms of Marxism.

The idealism of the predominant paradigm may be negated through the theoretical comprehension of how the pursuit of socio-human ideals is actually subjected to the domination of the arbitrariness and blind necessities of the rules of capitalist production. However, the critical negation further involves the attempt to demonstrate how socio-human purposefulness could possibly realize itself in and by the practical negation of the empirical appearance of a mechanical determination of social life by alienated economic forces. In the pursuit of such "realist" knowledge, dialectical theory may apprehend the social facts of whatever normative inclination from the point of departure of the transition of the commodity form and invoke the potentials of socio-human essence against the background of this theoretical totality. Thus, while the ideological practice seems to approach pedagogical principles and the educational problems of efficiency and legitimation on the basis of mere empiricism and wishful speculation, a critical theoretical practice may try to comprehend the relationships between educational form and content on the basis of its commitment to the potential emergence of pedagogy and socio-human emancipation.

In conclusion, the predominant paradigm and its critical negation may be taken to constitute a dialectical totality in which the nature of the opposition between two distinctive forms of scientific practice may be seen as of central importance to the efforts towards pedagogical reconstruction. Some of the possibilities in this respect may have been elucidated in this study, and although the explicit discussion of this matter has only pointed to the great need for further theoretical elaboration of a number of issues of crucial concern to a critical pedagogy, a general framework of such elaboration has been established. Within this framework, the ideological practice of research is seen as instituted as the interpretation of appearances by means of reified concepts, which have to be reconsidered in a critical perspective in order to approach the theoretical level of the dialectical unity of opposites; appearance and essence. Reified concepts may be apprehended as validly related to prevailing states at the level of appearance, but only to make their inherent negation of potentials beyond appearances stand out as the essential basis of critical comprehension. Ideology may be granted its partial insight, but the pursuit of a concrete grasp of educational problems will require a confrontation with the basic mystifications of the prevailing form of social reproduction. By the theoretical realization of the negation of ideology, contributions may be made to the practical realization of the negation of the commodity form.

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